DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
2 NAVY ANNEX
WASHINGTON, DC 20380-1775

MCO P3500.84
C 4610
6 May 05

MARINE CORPS ORDER P 3500.84

From: Commandant of the Marine Corps
To: Distribution List

Subj: AVIATION TRAINING AND READINESS (T&R) MANUAL, HH-46D
(SHORT TITLE: T&R MANUAL, HH-46D)

Ref: (a) MCO P3500.14H
(b) MCO 5215.1H

Encl: (1) LOCATOR SHEET

1. Purpose. To publish policies, procedures and standards regarding the training of HH-46D aircrew, per reference (a).

2. Cancellation. MCO P3500.17A, T&R Manual, Volume 4, Chapters 9-12.

3. Background. Significant changes to reference (a) directed a revision to this Manual in the following categories: Unit Mission Statement, Unit Core Capability Statement, Unit Mission Essential Task List, Unit Core Skill Proficiency requirements, Unit Instructor requirements, and T&R syllabi structure. Reference (a) prescribes a unique template to provide the commander with standardized programs of instruction. As such, this Order deviates from the five paragraph order format outlined in reference (b).

4. Recommendations. Recommended changes to this Order are invited, and may be submitted via the syllabus sponsor and the appropriate chain of command to: Commanding General, Training and Education Command (C 4610), Marine Corps Combat Development Command, 3300 Russell Road, Quantico, VA 22134-5001.

5. Applicability. This Manual is applicable to the Marine Corps Total Force.

6. Certification. Reviewed and approved this date.

T. S. JONES
By direction

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RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Entered	Signature of Person Incorporated Change

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CHAPTER 1

HH-46D (SAR) PILOT

FIGURES

*** * N O T E * ***

Aircrews shall include Crew Resource Management as part of their brief.

CHAPTER 1

HH-46D (SAR) PILOT

100. MARINE SEARCH AND RESCUE UNIT – HH-46D

1. General. The capabilities defined and described in the core capability and unit template sections are provided to ensure each like-SAR unit maintains a common base of training and depth of capabilities. When sources permit, and when, in the judgment of the commander, additional training would significantly increase the unit's Search and Rescue capability, training to a level above these base capabilities is permitted. It is incumbent upon and expected of commanders to balance any increase in the depth of core capabilities against the long-term health and readiness of their unit while staying within resource constraints.

2. Mission. To provide heliborne SAR capabilities to tenant aviation units. Additional missions are secondary in nature and shall be accepted on a not-to-interfere basis only.

3. Mission Essential Task List (METL)

a. Provide search and rescue for tenant aircraft.

b. Provide supplemental search and rescue asset for U. S. Coast Guard and U.S. Air Force missions.

c. Provide MEDEVAC capability to local civilian agencies as required, on a not-to-interfere basis.

d. Provide airborne fire-fighting capability for MCAS facilities and to supplement Forest Service assets in the local area.

e. Provide supplemental search and rescue to local civilian agencies for non-law enforcement type missions such as searches, fire fighting, disaster response, or civilian MEDEVAC, when civilian agencies cannot respond.

f. Provide utility and logistics support missions of MCAS activities as directed by the Director of Operations, MCABEAST.

g. Enhance public relations for the Commanding General, MCABEAST through static displays and flight demonstrations as authorized by higher authority.

4. Table of Organization

3 HH-46D helicopters
8 Pilots
9 Crew Chiefs
6 SAR Swimmers
4 SAR Corpsmen

5. Squadron Core Capability

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained search and rescue operations, assuming at least 100% Primary Authorized Allowance (PAA), 90% in reporting status, and 90% T/O on hand in all MOSs. If <90%, core capability will be degraded by like-percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to launch 1 full mission capable aircraft crewed by a fully qualified aircrew at all times. This aircraft must be airborne within 15 minutes of alert when operating under SAR Condition I and 1 hour under SAR Condition II.

101. PROGRAMS OF INSTRUCTION (POI) FOR BASIC AND REFRESHER PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1-56	Core Plus Training in CH-46E	FMF
57	HH-46D SAR Simulator	HC-11/MCAS New River
58-60	SAR Pilot Training Course	VMR-1/MCAS Beaufort
61-67	Ground/Flight SAR Training	VMR-1/MCAS Beaufort

102. POI FOR SERIES CONVERSION PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1-56	Core Plus Training in CH-46E	FMF
57	HH-46D SAR Simulator	HC-11/MCAS New River
58-60	SAR Pilot Training Course	VMR-1/MCAS Beaufort
61-64	Ground/Flight SAR Training	VMR-1/MCAS Beaufort

103. POI FOR INSTRUCTOR UNDER TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1-6	Flight Training	VMR-1/MCAS Beaufort

110. GROUND TRAINING COURSES OF INSTRUCTION

COURSE	ACTIVITY
SAR Ground School/SAR Pilot Training Course	VMR-1/MCAS Beaufort
HH-46D SAR Simulator	HC-11/MCAS New River

111. SQUADRON LEVEL TRAINING

NATOPS Flight Manual and Pilot NATOPS Pocket Checklist
Instrument Procedures and Changes
Flight Safety
SAR Mission Planning and Briefing
SAR TACAID
Global Positioning System (GPS) Operation
Squadron and Air Station Standard Operating Procedures (SOPs)
Local Course Rules
Survival
Flight Training Movies

120. FLIGHT TRAINING FOR BASIC AND REFRESHER PILOT

1. Basic and refresher pilots will be programmed to fly the complete program of instruction.

2. All syllabus flights shall be flown with a designated NATOPS Instructor.

3. Core Skill Introduction Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-.-	50.0
Familiarization	2	3.0	3.0
Instruments	2	3.0	3.0
Day Confined Area Landings	1	1.5	2.0
Firefighting	1	1.5	2.0
	6	**9.0**	**60.0**

4. Core Skill Basic Training

STAGE	FLIGHTS	HOURS	PERCENT
Day Search and Rescue	8	12.5	15.0
	8	**12.5**	**15.0**

5. Core Skill Advanced Training

STAGE	FLIGHTS	HOURS	PERCENT
Night Vision Goggles	4	6.0	8.0
Night Search and Rescue	7	11.5	12.0
	11	**17.5**	**20.0**

6. Core Plus Training

STAGE	FLIGHTS	HOURS	PERCENT
Helicopter Inland Rescue	1	1.5	1.0
Carrier Qualification	4	6.0	4.0
	4	**6.0**	**5.0**
Total	**30**	**46.5**	**100.0**
7. Instructor Under Training	**3**	**4.5**	
8. Special Training	**6**	**13.5**	

121. FLIGHT TRAINING FOR SERIES CONVERSION PILOT

1. Pilots current in the model H-46 helicopter will be programmed to fly the Series Conversion (SC) syllabus.

2. Core Skill Introduction, NVG Core Skill Advanced, and Core Skill Plus qualifications current per this Manual and the CH-46E T&R Manual remain current upon transfer to the HH-46D, upon approval of the SAR unit commanding officer.

3. All syllabus flights shall be flown with a designated NATOPS Instructor.

4. Core Skill Introduction Training

STAGE	FLIGHTS	HOURS
Basic Qualification	-	-.-
Familiarization	1	1.5
Firefighting	1	1.5
	2	**3.0**

5. Core Skill Basic Training

STAGE	FLIGHTS	HOURS
Day Search and Rescue	8	12.5
	8	**12.5**

6. Core Skill Advanced Training

STAGE	FLIGHTS	HOURS
Night Vision Goggles	1	2.0
Night Search and Rescue	7	12.0
	8	**14.0**

7. Core Skill Advanced Training

STAGE	FLIGHTS	HOURS
Helicopter Inland Rescue	1	1.5
Carrier Qualification	4	6.0
	5	**7.5**
Total	**19**	**30.0**
8. Instructor Under Training	**3**	**4.5**
9. Special Training	**6**	**13.5**

130. SIMULATOR TRAINING

1. Purpose. Familiarize all pilots with HH-46 normal cockpit procedures, Crew Resource Management (CRM), systems operations and limitations, emergency procedures, and to introduce instrument flight and emergency procedures in a SAR environment.

2. General. Initial simulator training shall be completed by all pilots prior to reporting to a SAR billet. Training will be conducted at an appropriate H-46 SAR simulator. Refresher training will be conducted annually thereafter. CRM shall always be stressed. In all cases, there shall be a primary and secondary pilot training mission, although only 1 pilot shall be evaluated at any time.

3. Initial Simulator Training (4 Periods, 4.0 Hours)

OFT-100 1.0 2F117B

Goal. Normal procedures, start, engage, shut-down and emergency procedures introduction.

Requirement. Introduce system differences between HH-46 aircraft, start, engage, shut-down, and emergencies.

OFT-101 1.0 2F117B

Goal. Normal start, engage, shut-down procedures, and in-flight emergencies.

Requirement. Review normal procedures. Introduce in-flight emergencies.

OFT-102 1.0 2F117B

Goal. Doppler introduction.

Requirement. Discuss emergency water landing in a night environment, single engine takeoff from water at night and emergency exits. Introduce low level instrument flight over water, Doppler pattern and procedures, and engine failures in the Doppler pattern.

OFT-103 1.0 2F117B

Goal. Doppler and emergency procedures review.

Requirement. Review OFT-102. Introduce search patterns.

4. Refresher Simulator Training (3 Periods, 3 Hours)

OFT-l04 1.0 2F117B

Goal. Emergency procedures review.

Requirement. Introduce all start, engage, shutdown and in-flight emergencies.

OFT-l05 1.0 2F117B

Goal. Doppler review.

Requirement. Discuss emergency water landing at night, single engine takeoff from the water at night and emergency exits. Review low level instrument flight over water, Doppler patterns and procedures, and engine failure in the Doppler pattern.

OFT-106 1.0 2F117B

Goal. Doppler and emergency procedures review.

Requirement. Review all Doppler procedures and emergencies.

140. FLIGHT PERFORMANCE REQUIREMENTS

1. Purpose. Become familiar with aircraft limitations and emergency procedures. Develop proficiency in SAR planning, in-flight procedures, and knowledge of safety regulations that pertain to SAR operations. Become familiar with SAR procedures and requirements.

2. General

a. Pilots that are current in the model H-46 helicopter will be programmed to fly the Series Conversion syllabus.

b. All other pilots will be programmed to fly the complete program of instruction regardless of qualifications.

c. All initial flights shall be flown with a designated NATOPS Instructor.

d. Local commands are granted the authority to waive requirements that are not applicable to the local operating environment.

e. All flights shall terminate with a comprehensive debrief with emphasis on aircrew performance using all evaluation techniques.

f. Aircrews shall fly events annotated with an N at least 30 minutes after official sunset. Aircrews may fly events annotated with (N) at night.

g. Aircrews shall fly events annotated with an NS with Night Vision Goggles for the entire flight. Aircrews may fly events with (NS) with the option of using NVGs.

h. Flight training events not flown in Core Skill Introduction training shall be flown in the subsequent stage of training.

i. All flights annotated with an E shall be evaluated per T&R Program Manual.

3. Minimum Altitudes. All syllabus sorties should be flown at the lowest altitude possible commensurate with the sortie description and flight safety.

4. Refly Interval. Figure 9-1 shows refly interval and Mission Readiness Percentage (MRP) for MOS 7562.

5. Aircrew Evaluation Flights. All pilots are required to have a NATOPS evaluation form filled out annually upon completion of the following:

a. NATOPS Check (RQD-600, RQD-602, RQD-603).

b. Instrument Check (RQD-601).

c. Any flight in the Core Skill Advanced, Core Skill Basic, or Core Skill Advanced phase as recommended by the Squadron Standardization Board.

d. Squadrons shall use Figure 9-3, the Aircrew Training Form for any evaluated flights.

6. CRM. Aircrews shall include CRM techniques as part of their brief.

141. CORE SKILL INTRODUCTION TRAINING

1. Familiarization

a. Purpose. Become familiar with aircraft flight characteristics, limitations, and emergency procedures; develop proficiency in all maneuvers contained the familiarization stage.

b. General

(1) Prior to FAM-108, conduct a thorough preflight and postflight inspection with a qualified SAR pilot.

(2) In preparing for a sortie, pilots shall study emergencies as prescribed in the NATOPS Flight Manual. The pilot's pocket checklist lacks important information presented in the NATOPS Flight Manual. In addition to the emergency procedures, study the aircraft systems related to each particular malfunction.

c. Crew Requirements. IP/PUI/CC.

d. Flight Training (2 Flights, 3.0 Hours)

FAM-108 1.5 T,R 1 ACFT

Goal. Conduct an aircraft and area familiarization.

Requirement

(1) Brief/Discuss. Differences between HH-46D and CH-46E aircraft.

(2) Introduce

(a) Normal cockpit, start, radio procedures, and taxiing.

(b) Local course rules.

(c) All familiarization procedures as per NATOPS.

(d) Local hospital and landing area familiarization.

Performance Standard. Pilot shall be able to identify differences between HH-46D and CH-46E series helicopters, and perform familiarization maneuvers per NATOPS.

EP-109 1.5 T,SC,R 1 ACFT

Goal. Conduct emergency procedure familiarization.

Requirement

(1) Brief/Discuss. Differences between HH-46D and CH-46E aircraft.

(2) Review

(a) All familiarization maneuvers with emphasis on hover and in-flight single engine emergencies.

(b) Perform practice autorotations and practice single engine flight.

(c) Local course rules.

Performance Standard. Pilot shall demonstrate knowledge of aircraft systems, perform basic FAM maneuvers, and be able to satisfactorily perform emergency procedures per NATOPS.

2. Instruments

a. Purpose. Develop proficiency in instrument flight procedures peculiar to the HH-46D aircraft under simulated or actual instrument conditions using all navigation aids.

b. General. All instrument flights will be conducted under actual or simulated instrument conditions.

c. Prerequisite. NVG-300 shall be flown prior to any night instrument flights.

d. Crew Requirements. IP/PUI/CC.

e. Flight Training (2 Flights, 3.0 Hours)

INST-110 1.5 T,R 1 ACFT

Goal. Review basic instrument and radio work.

Requirement

(1) Discuss

(a) Local instrument patterns.

(b) Approach criteria.

(2) Review

(a) Basic instrument work.

(b) TACAN procedures and approaches.

Performance Standard. Pilot shall be able to perform basic instrument procedures per NATOPS Manual and Instrument Flight Manual, and radio instrument procedures per the Instrument Flight Manual.

INST-111 1.5 T,R 1 ACFT (N)(NS)

Goal. Practice radio instruments.

Requirement

(1) Brief/Discuss. Visual illusions and vertigo.

(2) Review

(a) RADAR approaches.

(b) Instrument navigation.

(c) Appropriate emergency procedures.

Performance Standard. Pilot shall be able to conduct radio instrument procedures and remain within the standards set forth in the Instrument Flight Manual.

3. Confined Area Landings

a. Purpose. Develop the ability to perform takeoffs and landings in confined areas.

b. Crew Requirements. IP/PUI/CC.

c. Flight Training (1 Flights, 1.5 Hours)

CAL-120	1.5	T,R	1 ACFT

Goal. Conduct day confined area landings.

Requirement

(1) Brief/Discuss

(a) Normal and emergency procedures.

(b) Powerline and wire hazard proximity.

(c) Emergency vehicle locations.

(d) Crew coordination as they relate to CAL approaches.

(2) Review

(a) Normal Approach.

(b) Precision approach.

(c) Hover/No-hover landings.

Performance Standard. Pilot shall fly pattern within 50 ft and 10 kts of briefed altitude and airspeed, fly established pattern checkpoints, recognize closure rate to landing point, remain oriented in zone, demonstrate power management, maintain safe obstacle clearance, and land within one rotor of intended point of landing.

4. Fire Fighting

a. Purpose. Develop the ability to conduct water bucket operations.

b. Crew Requirements. IP/PUI/CC.

c. Flight Training (1 Flight, 1.5 Hours)

FF-140	1.5	T,SC,R	1 ACFT

Goal. Develop water bucket operations proficiency.

Requirement

(1) Brief/Discuss

(a) Water bucket pickup and release procedures.

(b) Crew coordination.

(c) ICS voice procedures.

(d) Lost communications hand signals.

(e) Emergency procedures.

(f) Maximum HOGE weight for pickup and delivery and flight envelopes with water buckets.

(g) Water bucket delivery techniques.

(2) Introduce. Water bucket operations.

(3) Review

(a) Hover check.

(b) All modes of cargo hook operation.

Performance Standard. Pilot shall fly pattern within 50 ft and 10 kts of briefed altitude and airspeed, fly established pattern checkpoints, properly respond to crew positioning calls, and maintain situational awareness of obstacles. Pilot shall be able to safely hold extended hover operations to fill Bambi Bucket, demonstrate understanding of HIGE/HOGE requirements, complete minimum of 5 hookups and water drops, and deliver water to fire within 5 meters of intended point of impact.

142. CORE SKILL BASIC TRAINING

1. Day Search and Rescue

a. Purpose. Develop proficiency in Day Search and Rescue operations and navigation, to include search planning, search patterns and techniques, Doppler approach procedures, overland and overwater rescue/recovery procedures.

b. Prerequisites

(1) The following flights of the Core Skill Introduction phase shall be satisfactorily completed prior to commencement of Day SAR Core Skill Basic qualification training:

(a) FAM-l08

(b) EP-109

(c) CAL-120

(2) Pilots may be designated as HH-46D (non-SAR) HAC at the discretion of the unit commanding officer prior to completion of the day and/or night SAR syllabi. Pilots who have not completed the appropriate SAR syllabus (day or night) shall not be assigned to SAR duty (day or night) until completion of the appropriate syllabus. Local commands are granted the authority to designate pilots as Day SAR HAC qualified upon completion of the Day Search and Rescue syllabus (Core Skill Basic Training).

(3) The following ground training shall be completed prior to commencing the Day SAR syllabus:

(a) Search planning, to include: local geographic and weather factors, parachute drift, water currents, sweep width, track space, probability of detection, and search patterns.

(b) Utilization and limitations of SAR equipment.

(c) SAR publications and directives.

(d) Map study of the local area including landmarks, medical facilities, course rules, and landing areas.

(e) SAR Coordinator, SAR Mission Commander, and On-scene Commander duties and responsibilities.

(f) Local SAR organizations and their relationships.

(g) Familiarity with local tactical and Air Traffic Control agencies and their capabilities and frequencies.

(h) Legal implications of Search and Rescue.

(i) GPS operation and limitations.

(4) CRM shall be briefed for each syllabus flight.

2. Search And Rescue Navigation and Recovery Procedures

a. Purpose. Develop proficiency in conducting search operations using additional navigation aids as available.

b. General. The training is designed around local GPS capabilities. Differences in configurations and equipment will require modifications at each SAR command. Lack of appropriate equipment is sufficient basis for waiver of these syllabus flights.

c. Crew Requirements. IP/PUI/CC/IFMT/RAC.

d. Flight Training (8 Flights, 12.5 Hours)

SAR-200 1.5 T,SC,R 1 ACFT

Goal. Conduct GPS/dead reckoning navigation training.

Requirement

(1) Brief/Discuss

(a) Aircraft GPS operation and programming.

(b) Hand-held GPS operation and programming.

(c) Dead reckoning principles.

(d) Crew responsibilities.

(e) Desired track, actual track, cross track, and CDI sensitivity.

(f) CRM.

(g) Time/distance checks.

(h) Distance estimation and map information.

(i) Map preparation.

(j) Lost plane procedures.

(2) Introduce

(a) Dead reckoning procedures, emphasizing use of terrain, contour features, and triangulation to determine position.

(b) GPS navigation procedures emphasizing use of secondary systems and dead reckoning as backup navigation.

(c) Conduct a flight consisting of a minimum of 5 checkpoints at SAR altitudes (300-500 ft AGL). Remain within 500 meters of course line.

(d) Enroute checklist.

Prerequisite. None.

Performance Standard. Pilot shall input search pattern into GPS and shall conduct a search pattern consisting of a minimum of 5 checkpoints, maintain within 500 meters of course line, altitude within 50 feet, and airspeed within 10 knots.

Ordnance. None.

External Syllabus Support. None.

SAR-202 1.5 T,SC,R 1 ACFT

Goal. Conduct search pattern and overland search procedures.

Requirement

(1) Brief/Discuss

(a) Search patterns.

(b) Commence Search Point (CSP).

(c) Parallel track offset.

(d) Survivor signaling capabilities.

(e) Utilization of GPS to conduct search patterns.

(f) Multiple survivor location and assessment.

(g) Overland crewman deployment and pickup procedures.

(2) Introduce

(a) Search pattern execution using GPS.

(b) Parallel search pattern.

(c) Trackline search pattern.

(d) Preapproach Doppler Checklist.

(3) Review

(a) Point-to-point navigation.

(b) Dead reckoning navigation.

(c) Confined area landings (CAL).

Prerequisite. None.

Performance Standard. Pilot shall input search pattern into GPS and shall conduct a search pattern consisting of a minimum of 5 checkpoints, maintain within 500 meters of course line, altitude within 50 feet, and airspeed within 10 knots. Pilot shall conduct a hover for crewmember deployment, maintaining within 10 feet of altitude, and within 2 meters of hover point.

Ordnance. None.

External Syllabus Support. None.

SAR-203 1.5 T,SC,R 1 ACFT

Goal. Conduct day overland hoisting.

Requirement

(1) Brief/Discuss

(a) Crew responsibilities.

(b) Voice procedures and standard voice calls.

(c) Hand/arm signals.

(d) Emergency procedures during hover/hoist operations.

(e) Hoist limitations.

(f) Training requirements/limitations for overland hoisting.

(2) Introduce

(a) Configure aircraft for hoisting operations.

(b) Approach to pickup.

(c) Hover positions/techniques.

1 Standby position/altitude.

2 Delivery/pickup position/altitude.

(d) Hand/arm signals.

(e) Gear delivery procedures.

(f) Confined area delivery/pickup techniques.

Prerequisite. None.

Performance Standard. Pilot shall conduct a hover for crewmember deployment remaining within 10 feet of altitude and within 2 meters of hover point.

Ordnance. None.

External Syllabus Support. None.

SAR-204 1.5 T,SC,R 1 ACFT

Goal. Conduct day overland, over-the-ramp hoisting.

Requirement

(1) Brief/Discuss

(a) Crew responsibilities.

(b) Voice procedures and standard voice calls.

(c) Hand/arm signals.

(d) Emergency procedures during hover/hoist operations.

(e) Winch limitations.

(f) Training requirements/limitations for overland hoisting.

(2) Introduce

(a) Configure aircraft for over-the-ramp hoisting operations.

(b) Hover positions/techniques.

1 Standby position/altitude.

2 Delivery/pickup position/altitude.

(3) Review

(a) Hand/arm signals.

(b) Gear delivery procedures.

(c) Confined area delivery/pickup techniques.

Prerequisite. SAR-203.

Performance Standard. Pilot shall conduct a hover for crewmember deployment remaining within 10 feet of altitude and within 2 meters of hover point.

Ordnance. None.

External Syllabus Support. None.

SAR-205 2.0 T,SC,R 1 ACFT

Goal. Conduct day overland SAREX.

Requirement

(1) Brief/Discuss

(a) SAR duty crew requirements, limitations, and Alert Conditions.

(b) Short-fused information collection.

(c) Mission Update Briefing techniques.

(d) Aircraft configuration.

(e) SAR equipment.

(f) Coordinating agencies.

(g) Use of SAR TACAID.

(h) Emergency procedures.

(2) Introduce

(a) Emergency response/recall procedures.

(b) Scenario-based overland SAR Exercise.

(3) Review

(a) SAR aircraft configurations.

(b) Search patterns.

(c) Hoisting operations.

(d) Hover position/techniques.

(e) Hand/arm signals.

(f) Gear delivery procedures.

(g) Confined area delivery/pickup techniques.

Prerequisite. SAR-200, SAR-202, SAR-203, SAR-204.

Performance Standard. Pilot shall input search pattern into GPS and shall conduct a search pattern consisting of a minimum of 5 checkpoints, maintain within 500 meters of course line, altitude within 50 feet, and airspeed within 10 knots. Pilot shall safely execute confined area landing, landing within 1 rotor of intended point of landing. Pilot shall conduct a hover for crewmember deployment, remaining within 10 feet of altitude, and within 2 meters of hover point.

Ordnance. None.

External Syllabus Support. Hospital/LZ coordination as required for scenario. Survivors as required.

SAR-206 1.5 T,SC,R 1 ACFT

Goal. Conduct day overwater SAR approaches.

Requirement

(1) Brief/Discuss

(a) Procedures for sighting victims.

(b) Use of flare for wind direction/speed determination.

(c) Ditching procedures/considerations.

(d) Crew responsibilities.

(e) Remote flight control station operation and voice procedures.

(f) Saltwater encrustation.

(2) Introduce

(a) Flare deployment.

(b) Sector search pattern.

(c) Square search pattern.

(d) Doppler approach pattern.

(e) Conduct minimum of 3 manual and 3 coupled approaches.

(f) Remote flight control station operation.

(3) Review

(a) Hover positions/techniques

1 Standby position/altitude.

2 Deliver/pickup position/altitude.

(b) Point-to-point navigation.

(c) Dead reckoning navigation.

Prerequisite. SAR-202.

Performance Standard. Pilot shall input search pattern into GPS and shall conduct a search pattern consisting of a minimum of 5 checkpoints, maintain within 500 meters of course line, altitude within 50 feet, and airspeed within 10 knots. Pilot shall conduct minimum of 3 manual and 3 coupled Doppler approaches, and shall maintain a hover for crewmember deployment remaining within 10 feet of altitude and within 2 meters of hover point.

Ordnance. 2 Mk-25 flares.

External Syllabus Support. None.

SAR-207 1.5 T,SC,R 1 ACFT

Goal. Conduct day maritime SAR training (Water work).

Requirement

(1) Brief/Discuss

(a) Crew responsibilities.

(b) Rescue Aircrewman (RAC) deployment altitudes and procedures.

(c) RAC safety, environmental, debris, and predator considerations.

(d) Rescue equipment and trail line operation.

(e) Procedures for loss of visual contact with RAC.

(f) Short haul procedures.

(2) Introduce

(a) RAC deployment.

(b) Rescue equipment deployment and recovery.

(c) Short haul procedures.

(d) RAC and survivor recovery.

(3) Review

(a) Flare deployment.

(b) Doppler approach pattern.

(c) Manual and coupled approaches.

(d) Hover positions/techniques.

Prerequisite. SAR-202, SAR-203, SAR-206.

Performance Standard. Pilot shall conduct a hover for crewmember deployment maintaining within 10 feet of altitude and within 2 meters of hover point. Pilot shall conduct a short haul of at least 500 meters remaining within 10 feet of safe short haul altitude and placing rescue aircrewman within 10 feet of intended point of landing.

Ordnance. 2 Mk-25 flares.

External Syllabus Support. Safety Boat/aircraft with safety swimmer. Survivors as required.

SAR-209 1.5 T,SC,R 1 ACFT

Goal. Conduct day boat hoist. (If practical, IP should demo from right seat, then hot seat crew positions for introduction items. For safety, the Pilot-At-Controls (PAC) should be the right seat pilot for the approach-to-boat and over-the-boat operations.)

Requirement

(1) Brief/Discuss

(a) Crew responsibilities.

(b) Approach-to-boat.

(c) Hover position, altitude, and scan.

(d) Voice procedures.

(e) RAC deployment considerations.

(f) ORM/safety considerations.

(g) Rescue equipment and trail line operation.

(h) Loss of visual contact with boat.

(i) Emergency procedures over the boat.

(2) Demonstrate

(a) Approach-to-boat.

(b) Hover position/altitude.

(c) RAC and survivor recovery.

(3) Introduce

(a) Approach-to-boat.

(b) Hover position/altitude.

(c) RAC and survivor deployment and recovery.

(d) Rescue equipment deployment and recovery.

(e) Short haul procedures.

Prerequisite. SAR-206, SAR-207.

Performance Standard. Pilot shall conduct a minimum of 3 approaches to a boat configured for SAR rescue, and conduct a hover for crewmember deployment, maintaining within 10 feet of altitude and within 2 meters of hover point. Pilot shall conduct "back and left" maneuvers in conjunction with approaches remaining within 50 meters of the boat. A minimum of 3 hoists from the deck of the boat shall be conducted.

Ordnance. None.

External Syllabus Support. Safety Boat with safety swimmer. Survivors as required.

143. CORE SKILL ADVANCED TRAINING

1. Night Vision Goggles

a. Purpose. Develop proficiency in conducting basic familiarization and navigation operations using NVGs.

b. General. Search and Rescue NSQ consists of NVG-300 through SAR-328.

c. Prerequisites

(1) The Night Operations Course contained in the MAWTS-1 Course Catalog shall be completed prior to conducting NVG flights.

(2) The PUI shall have completed all NVG flights in the Core Skill Introduction syllabus per T&R Manual, CH-46E.

(3) Basic and Refresher pilots who were previously NSQ per T&R Manual, CH-46E shall complete the Series Conversion syllabus of this program of instruction.

(4) Pilots who are not SAR NSQ shall fly all flights with a designated NSSI.

(5) The pilot under instruction shall be a designated SAR H2P.

d. Crew Requirement. NSSI/PUI/CC/O.

e. Flight Training (4 Flights, 6.0 Hours)

NVG-300	1.5	T,R	1 ACFT N/NS

Goal. NVG familiarization flight.

Requirement

(1) Brief/Discuss

(a) Crew coordination.

(b) Crew comfort levels.

(c) NVG operations and limitations.

(d) Emergency procedures.

(e) Differences between HH-46D and CH-46E.

(2) Introduce

(a) Use of NVGs at an unlit field.

(b) Use of NVGs while performing taxi, basic low work, and normal takeoffs/landings.

(c) Touch and go landings with emphasis on aircraft control and cockpit coordination.

Performance Standard. Pilot shall maintain effective NVG/instrument scan, recognize closure rate with intended point of landing, retain positive aircraft control, demonstrate effective cockpit management, utilize proper terminology, fly pattern within 50 feet and 10 kts of briefed altitude and airspeed, fly established pattern checkpoints and land within 1 rotor of intended point of landing.

NVG-301 1.5 T,R 1 ACFT N/NS

Goal. Develop proficiency in confined area landings using NVGs. This flight may be conducted in High Light Level Conditions.

Requirement

(1) Brief/Discuss

(a) Crew Coordination.

(b) Crew comfort levels.

(c) Aircraft lighting.

(d) Confined area landing approaches.

(e) Scanning techniques.

(2) Introduce

(a) Confined area takeoff and landings using NVGs.

(b) Plan/navigate a route to a confined area landing site.

(c) Enroute to a CAL site demonstrate the difficulty of terrain reference at altitude.

Performance Standard. Pilot shall maintain effective NVG/instrument scan, recognize closure rate with intended point of landing, retain positive aircraft control, demonstrate effective cockpit management, utilize proper terminology, fly pattern within 50 feet and 10 kts of briefed altitude and airspeed, fly established pattern checkpoints, remain oriented in zone, and land within 1 rotor of intended point of landing.

NVG-302 1.5 T,R 1 ACFT N/NS

Goal. Develop proficiency in NVG operations under low light level conditions (below .0022 LUX).

Requirement

(1) Brief/Discuss

(a) Crew Coordination.

(b) Crew comfort levels.

(c) Aircraft lighting.

(d) Navigation and search altitudes.

(e) Scanning techniques.

(f) Emergency procedures NVG operations.

(2) Introduce. Demonstrate the difficulty of terrain reference at altitude during low light level conditions.

Performance Standard. Pilot shall fly pattern within 50 ft and 10 kts of briefed altitude and airspeed, fly established pattern checkpoints, recognize proper closure rate with intended point of landing, and land within 1 rotor of intended point of landing while maintaining effective NVG/instrument scan.

NVG-303 1.5 T,SC,R 1 ACFT N/NS

Goal. Develop proficiency in low level navigation operations using NVGs under low light level conditions.

Requirement

(1) Brief/Discuss

(a) CRM.

(b) Crew comfort levels.

(c) Aircraft lighting.

(d) Navigation and search altitudes.

(e) Scanning techniques.

(f) Emergency procedures relating to low level NVG operations.

(2) Introduce

(a) Low level navigation under low light level conditions.

(b) Conduct navigation from a confined area landing site to a hospital landing pad.

(c) Obstacles along route of flight.

Performance Standard. Pilot shall fly a route to a Commence Search Point and conduct a search pattern, maintain effective NVG/instrument scan, recognize proper closure rate with intended point of landing, remain oriented on route within 500 meters, ensure effective CRM for navigation and obstacle clearance, retain positive aircraft control, and demonstrate effective cockpit management for precision navigation utilizing proper terminology.

2. Night Search and Rescue

a. Purpose

(1) Develop proficiency in night Search and Rescue operations to include search planning, search patterns and techniques, Doppler approach procedures, overwater and overland rescue/recovery procedures.

(2) Pilots may fly the night SAR syllabus codes with or without the aid of Night Vision Devices (NVD). The intent of this syllabus is to develop the skills critical to the Search and Rescue mission versus NVD proficiency. NVD proficiency/currency should be considered when conducting NVD SAR flights.

(3) When complete with the night SAR training syllabus, aircrew should have the ability to conduct night SAR missions under various atmospheric conditions.

b. Prerequisites

(1) Pilots may begin the night SAR syllabus training prior to completion of the entire day SAR syllabus. Prior to commencement of a night SAR syllabus flight, the prerequisite day SAR syllabus flight shall be complete.

(2) Initial syllabus training flights utilizing NVDs shall be flown with a Night Systems SAR Instructor (NSSI). Aircrew flying night syllabus flights utilizing NVDs shall have completed the HH-46D NVG syllabus.

(3) HH-46D HACs/H2Ps that have not completed the night SAR syllabus may be designated Day SAR HAC/H2P, and may be designated a Night SAR H2P upon completion of NVG-300 and NSAR-321, but shall not be a Night SAR HAC until completion of both night SAR (NSAR-321 through NSAR-328) and NVG (NVG-300 through NVG-303) syllabi.

c. Crew Requirements. IP/PUI/CC/IFMT/RAC. (Designated NSSI and NSQ HLL/LLL for flights utilizing NVDs.)

d. Flight Training (7 flights, 11.5 hours)

NSAR-321 1.5 T,SC,R 1 ACFT N (NS)

Goal. Conduct night search pattern and overland survivor assessment.

Requirement

(1) Brief/Discuss

(a) Search patterns.

(b) Commence Search Point (CSP).

(c) Parallel track offset.

(d) Survivor signaling capabilities at night.

(e) Multiple survivor location and assessment.

(f) Overland crewman deployment and pickup procedures.

(2) Introduce

(a) Search patterns.

(b) Night Sun use and techniques.

(c) Signaling devices.

(3) Review. Night CALs.

Prerequisite. SAR-202.

Performance Standard. Pilot shall input search pattern into GPS and shall conduct a search pattern consisting of a minimum of 5 checkpoints, maintain within 500 meters of course line, altitude within 50 feet, and airspeed within 10 knots.

Ordnance. Smoke as required/available.

External Syllabus Support. RAC/IFMT may act as survivor for signaling introduction.

NSAR-322 1.5 T,SC,R 1 ACFT N (NS)

Goal. Conduct night overland hoisting.

Requirement

(1) Brief/Discuss

(a) Crew responsibilities.

(b) Voice procedures and standard voice calls.

(c) Hand/arm signals at night.

(d) Emergency procedures during hover/hoist operations.

(e) Maneuvering aircraft over survivor at night.

(2) Introduce

(a) Configure aircraft for night hoisting operations.

(b) Approach to pickup.

(c) Hover positions/techniques.

1 Standby position/altitude.

2 Delivery/pickup position/altitude.

(d) Night hand/arm signals.

(e) Night gear delivery procedures.

(f) Confined area delivery/pickup techniques.

(3) Review

(a) Gear delivery procedures.

(b) Confined area delivery/pickup techniques.

(c) Night CALs.

Prerequisite. SAR-203, SAR-204.

Performance Standard. Pilot shall safely conduct confined area landing, landing within 1 rotor of intended point of landing. Pilot shall conduct a hover for crewmember deployment, maintaining within 10 feet of altitude, and within 2 meters of hover point.

Ordnance. None.

External Syllabus Support. None.

NSAR-323 2.0 T,SC,R 1 ACFT N (NS)

Goal. Conduct night overland SAREX.

Requirement

(1) Brief/Discuss

(a) SAR duty crew requirements, limitations, and Alert Conditions.

(b) Short-fused information collection.

(c) Mission Update Briefing techniques.

(d) Aircraft configuration.

(e) SAR equipment.

(f) Coordinating agencies.

(g) Use of SAR TACAID.

(h) Emergency Procedures.

(2) Introduce

(a) Night emergency response/recall procedures.

(b) Night scenario-based overland SAR Exercise.

(3) Review

(a) SAR aircraft configurations.

(b) Search patterns.

(c) Hoisting operations.

(d) Hover position/techniques.

(e) Night hand/arm signals.

(f) Night gear delivery procedures.

(g) Night confined area delivery/pickup techniques.

Prerequisite. SAR-205, NSAR-321, NSAR-322.

Performance Standard. Pilot shall input search pattern into GPS and shall conduct a search pattern consisting of a minimum of 5 checkpoints, maintain within 500 meters of course line, altitude within 50 feet, and airspeed within 10 knots. Pilot shall safely conduct confined area landing, landing within 1 rotor of intended point of landing. Pilot shall conduct a hover for crewmember deployment, maintaining within 10 feet of altitude, and within 2 meters of hover point.

Ordnance. Smoke as required/available.

External Syllabus Support. Hospital/LZ coordination as required for scenario. Survivors as required.

NSAR-324 1.5 T,SC,R 1 ACFT N (NS)

Goal. Conduct night overwater SAR approaches.

Requirement

(1) Brief/Discuss

(a) Procedures for sighting victims at night.

(b) Use of flare at night.

(c) Ditching procedures/considerations.

(d) Crew responsibilities.

(e) Night instrument scan/low visibility operations in close proximity to the water.

(f) Coupled Doppler system.

(g) Saltwater encrustation.

(2) Introduce

(a) Night flare deployment.

(b) Sector search pattern.

(c) Square search pattern.

(d) Doppler approach pattern.

(e) Conduct minimum of 3 manual and 3 coupled approaches.

(f) Remote flight control station operation.

(3) Review

(a) Hover positions/techniques

1 Standby position/altitude.

2 Deliver/pickup position/altitude.

(b) Point-to-point navigation.

(c) Dead Reckoning navigation.

Prerequisite. SAR-206, SAR-207, NSAR-321.

Performance Standard. Pilot shall input search pattern into GPS and shall conduct a search pattern consisting of a minimum of 5 checkpoints, maintain within 500 meters of course line, altitude within 50 feet, and airspeed within 10 knots. Pilot shall conduct minimum of 3 manual and 3 coupled Doppler approaches, and shall maintain a hover for crewmember deployment, remaining within 10 feet of altitude, and within 2 meters of hover point.

Ordnance. 2 Mk-25 flares or 1 Mk-58 flare.

External Syllabus Support. None.

NSAR-325 1.5 T,SC,R 1 ACFT N (NS)

Goal. Conduct night maritime SAR training (Night water work).

Requirement

(1) Brief/Discuss

(a) Crew responsibilities.

(b) Rescue Aircrewman (RAC) deployment altitudes and procedures.

(c) RAC safety, environmental, debris, and predator considerations.

(d) Rescue equipment and trail line operation.

(e) Procedures for loss of visual contact with RAC at night.

(f) Short haul procedures.

(2) Introduce

(a) RAC deployment.

(b) Rescue equipment deployment and recovery.

(c) RAC and survivor recovery.

(3) Review

(a) Flare deployment.

(b) Doppler approach pattern.

(c) Manual and coupled approaches.

(d) Hover positions/techniques.

Prerequisite. SAR-207, NSAR-321, NSAR-322, NSAR-324.

Performance Standard. Pilot shall conduct a hover for crewmember deployment, maintaining within 10 feet of altitude, and within 2 meters of hover point. Pilot shall conduct a short haul of at least 100 meters remaining within 10 feet of safe short haul altitude and placing rescue aircrewman within 10 feet of intended point of landing.

Ordnance. 2 Mk-25 flares or 1 Mk-58 flare.

External Syllabus Support. Safety boat/aircraft with safety swimmer. Survivors as required.

NSAR-327 1.5 T,SC,R 1 ACFT N (NS)

Goal. Conduct night boat hoist. (If practical, IP should demo from right seat, then hot seat crew positions for introduction items. For safety, the pilot-at-controls (PAC) should be the right seat pilot for the approach to boat and over-the-boat operations.)

Requirement

(1) Brief/Discuss

(a) Crew responsibilities.

(b) Boat lighting/antennas.

(c) Approach to boat.

(d) Hover position, altitude, and scan.

(e) Voice procedures.

(f) RAC deployment considerations.

(g) ORM/safety considerations.

(h) Rescue equipment and trail line operation.

(i) Loss of visual contact with boat at night.

(j) Emergency procedures over the boat at night.

(2) Demonstrate

(a) Approach to boat.

(b) Hover position/altitude.

(c) RAC and survivor recovery.

(3) Introduce

(a) Approach to boat.

(b) Hover position/altitude.

(c) RAC and survivor deployment and recovery.

(d) Rescue equipment deployment and recovery.

(e) Short haul procedures.

Prerequisite. SAR-207, NSAR-321, NSAR-322, NSAR-324, NSAR-325.

Performance Standard. Pilot shall conduct a minimum of 3 approaches to a boat configured for SAR rescue, and conduct a hover for crewmember deployment, maintaining within 10 feet of altitude, and within 2 meters of hover point. Pilot shall conduct “back and left” maneuvers in conjunction with approaches remaining within 50 meters of the boat. A minimum of 3 hoists from the deck of the boat shall be conducted.

Ordnance. None.

External Syllabus Support. Safety boat with safety swimmer. Survivors as required.

NSAR-328 2.0 T,SC,R, E 1 ACFT N (NS)

Goal. Conduct night SAREX to integrate all skills learned in the day and night SAR syllabi to affect a search, recovery and delivery of a survivor or survivors to competent medical care.

Requirement

(1) Brief/Discuss. Scenario based SAR evolution. IP should provide the PUI with a scenario and brief/discuss limitations and safety as it pertains to deployment and recovery of aircrew during training evolutions.

(2) Review

(a) Launch on a simulated SAR mission, either overland or overwater, or a combination. PUI shall be given a scenario and be required to develop a plan and brief the crew prior to launching using SOP readiness and launch criteria.

(b) Short-fused information collection and planning.

(c) Emergency response/recall procedures.

(d) Any search pattern.

(e) Conduct manual and coupled approaches.

(f) Deploy/recover aircrew and survivors.

(g) Hoisting operations.

Prerequisite. Day SAR syllabus complete. NVG syllabus complete. Night SAR syllabus complete through NSAR-327.

Performance Standard. Pilot shall complete a successful search (overland or overwater), conduct hoist recovery operations, and delivery of patient to competent medical care.

Ordnance. 2 Mk-25 or 1 Mk-58 flares.

External Syllabus Support. Hospital/LZ coordination as required for scenario. Safety boat/aircraft with safety swimmer as required. Survivors as required.

144. CORE PLUS TRAINING

1. Helicopter Inland Rescue Aircrewman (HIRA) Rappel Operations

a. Purpose. Develop proficiency in rappelling procedures.

b. General

(1) All rappel training evolutions shall be conducted with the use of a belay line for “bagless” rappels or have a HIRA qualified safety observer tending the free end of the rappel rope during the “standard” rappel.

(2) Only HIRA qualified personnel shall act as survivor for all HIRA training short haul evolutions.

c. Prerequisites. CAL-120, SAR-203, SAR-204.

d. Crew Requirements. IP/PUI/CC/HIRAI/HIRAUT

e. Flight Training (1 flight, 1.5 hours)

RAP-402 1.5 T,SC,R 1 ACFT

Goal. Conduct SAR rappelling and short haul operations.

Requirement

(1) Brief/Discuss

(a) Crew responsibilities.

(b) Voice procedures and standard voice calls.

(c) Hand/arm signals.

(d) Emergency procedures during rappel operations.

(e) Rappelling with equipment and litter short haul procedures.

(f) Training requirements/limitations for overland hoisting.

(2) Introduce/Demonstrate

(a) Configure aircraft for rappelling operations.

(b) Conduct minimum of 3 rappel descents with equipment.

(c) Minimum of 2 descents should end with short haul of a simulated survivor in rescue litter.

(d) Hand/arm signals.

Prerequisite. CAL-120, SAR-203, SAR-204.

Performance Standard. Pilot shall safely conduct confined area landing, landing within 10 feet of intended point of landing. Pilot shall conduct a hover for crewmember rappel deployment, maintaining within 10 feet of altitude, and within 2 meters of hover point, and conduct a short haul of at least 500 meters remaining within 10 feet of safe short haul altitude and placing rescue aircrewman within 10 feet of intended point of landing.

Ordnance. None.

External Syllabus Support. None.

2. Carrier Qualification

a. Purpose. Qualify during day and night shipboard landings.

b. General. Training includes FCLP/CQ and NVG operations. Overwater searches may require shipboard operations for refueling, casualty recovery, and/or remote site launches. Pilots should be familiar with aviation capable ships to support that contingency. The benefits of NVG operations cannot be overemphasized, and every effort should be made to ensure all crewmembers are SAR Night Systems Qualified (SAR NSQ). The CQ syllabus is designed as an NVG-centric syllabus, but all pilots should be familiar with unaided shipboard operations.

(1) Refer to the NATOPS Manual, NWP-42, and LHA/LPH/LHD NATOPS for carrier operations.

(2) Pilots who are CQ current in the model H-46 helicopter will be considered current in the HH-46D until that currency expires.

(3) Five NVG landings required for each CQ flight.

c. Crew Requirements. IP/PUI/CC.

d. Flight Training (4 Flights, 6.0 Hours)

FCLP-410 1.5 T, R 1 ACFT

Goal. Day Field Carrier Landing Pattern (FCLP) familiarization.

Requirement

(1) Brief/Discuss

(a) Aircrew coordination.

(b) Verbal/visual communications used during shipboard landings.

(c) LSE signals.

(d) Water landing/ditching.

(e) Aircraft lighting.

(2) Introduce

(a) Day FCLP patterns.

(b) Approaches and landings.

(c) Emergency procedures peculiar to shipboard operations.

Prerequisite. None.

Performance Standard. Pilot shall demonstrate proper shipboard communications and aircraft lighting procedures, maintain effective instrument scan, execute proper cockpit switchology, fly established CQ pattern demonstrating understanding of proper upwind, crosswind and interval parameters, fly 300 ft/80 kt pattern within 50 ft and 10 kts, maintain proper closure and bearing with intended ship landing spot, respond promptly and safely to altitude and drift calls

from aircrew, remain oriented on assigned landing spot, and land within 1 meter of intended point of landing.

Ordnance. None.

External Syllabus Support. Marked FCLP deck.

FCLP-411 1.5 T, R 1 ACFT N/NS

Goal. Night FCLP familiarization.

Requirement

(1) Brief/Discuss

(a) Aircrew coordination.

(b) Verbal/Visual communications used during shipboard landings.

(c) LSE signals.

(d) Water landing/ditching.

(e) Aircraft lighting.

(2) Introduce

(a) Night FCLP patterns.

(b) Minimum of 2 unaided night FCLP landings will be conducted.

(c) Approaches and landings.

(d) Emergency procedures peculiar to shipboard operations.

Prerequisite. None.

Performance Standard. Pilot shall demonstrate proper shipboard communications and aircraft lighting procedures, maintain effective instrument scan, execute proper cockpit switchology, maintain effective NVG/instrument scan, fly established CQ pattern demonstrating understanding of proper upwind, crosswind and interval parameters, fly 300 ft/80 kt pattern within 50 ft and 10 kts, maintain proper closure and bearing with intended ship landing spot, respond promptly and safely to altitude and drift calls from aircrew, remain oriented on assigned landing spot, and land within 1 meter of intended point of landing.

Prerequisite. FCLP-410.

Ordnance. None.

External Syllabus Support. Marked FCLP deck.

CQ-420 1.5 T, R 1 ACFT

Goal. Day carrier qualification.

Requirement

(1) Brief/Discuss

(a) Aircrew coordination.

(b) Verbal/visual communications used during shipboard landings.

(c) LSE signals.

(d) Water landing/ditching.

(e) Aircraft lighting.

(2) Introduce. Day carrier qualification per NATOPS.

Prerequisite. None.

Performance Standard. Pilot shall fly 300 ft/80 kt pattern within 25 ft and 10 kts, fly established CQ pattern demonstrating understanding of proper upwind, crosswind and interval parameters, maintain proper orientation to LSE, respond promptly and safely to altitude and drift calls from aircrew, remain oriented on assigned landing spot, land within 1 meter of intended point of landing, utilize solid instrument scan, recognize proper closure rate with intended point of landing, demonstrate understanding of shipboard communications, and aircraft lighting.

Prerequisite. FCLP-410.

Ordnance. None.

External Syllabus Support. Air capable ship deck.

CQ-421 1.5 T, R 1 ACFT N/NS

Goal. Night carrier qualification.

Requirement

(1) Brief/Discuss

(a) Aircrew coordination.

(b) Verbal/visual communications used during shipboard landings.

(c) Minimum of 2 unaided night CQ landings will be conducted.

(d) LSE signals at night.

(e) Water landing/ditching and other aircraft emergencies relative to the night shipboard environment.

(f) Aircraft and shipboard lighting.

(g) NVG emergency procedures.

(h) Night alternate pattern.

(2) Introduce. Night carrier qualification per NATOPS.

Performance Standard. Pilot shall fly 300 ft/80 kt pattern within 25 ft and 10 kts, fly established CQ pattern demonstrating understanding of proper upwind, crosswind and interval parameters, maintain proper orientation to LSE, respond promptly and safely to altitude and drift calls from aircrew, remain oriented on assigned landing spot, land within 1 meter of intended point of landing, utilize solid NVG/instrument scan, recognize proper closure rate with intended point of landing, demonstrate understanding of shipboard communications, and aircraft lighting.

Prerequisite. FCLP-410, CQ-411, CQ-420.

Ordnance. None.

External Syllabus Support. Air capable ship deck.

150. SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS. Initial simulator training shall be completed by all pilots prior to reporting to a SAR billet. Training will be conducted at appropriate H-46 SAR simulator. Refresher training will be conducted annually thereafter.

151. INSTRUCTOR UNDER TRAINING (IUT)

1. Purpose. Develop qualified instructor pilots with the ability to teach SAR operations using standardized flight training.

2. General. Maneuver descriptions are found in the HMMT-164 H-46 Standardization Manual, NATOPS Flight Manual and the MAWTS-1 Course Catalog.

3. Prerequisite

(a) All sorties should be flown with an experienced instructor pilot.

(b) Instructor pilots shall complete all flights in the IUT stage.

4. Crew Requirements. IP/IUT/CC/RAC/IFMT.

5. Training

a. Ground Training. IUTs will complete the appropriate portion of the ISD program and present 1 SAR class from the SAR Training Lectures CD prior to qualification.

b. Simulator Training. Incorporated in the flight training.

c. Flight Training (3 Flights, 6.0 Hours)

FAM-500 1.5 E 1 ACFT (N)

Goal. Conduct all basic familiarization maneuvers and instrument procedures.

Requirement

(1) Brief/Discuss

(a) Crew coordination.

(b) Confined area landings.

(c) Emergency procedures.

(d) Instrument checklists.

(e) Attitude instrument flight.

(f) Instrument approaches.

(g) Flight planning.

(2) Review

(a) All FAM stage maneuvers.

(b) Confined area landings.

(c) Instrument procedures.

Performance Standard. Pilot shall demonstrate the ability to instruct familiarization and instrument maneuvers, including demonstrating and introducing maneuvers to pilots under instruction.

FF-502 1.5 E 1 ACFT (N)

Goal. Review water bucket operations and personnel hoisting procedures.

Requirement

(1) Brief/Discuss

(a) Crew coordination.

(b) Load computation/planning.

(c) Emergency procedures.

(2) Review

(a) Water bucket operations.

(b) External hoist operations.

(c) Hoist operations using internal winch.

Performance Standard. Pilot shall demonstrate the ability to instruct water bucket operations maneuvers and delivery techniques, including demonstrating and introducing maneuvers to pilots under instruction.

SAR-503 1.5 E 1 ACFT (N)

Goal. Review all SAR inflight procedures.

Requirement

(1) Brief/Discuss

(a) Aircraft configuration.

(b) SAR equipment.

(c) Coordinating agencies.

(d) Flare patterns.

(e) Use of SAR TACAID.

(f) Crew coordination.

(g) Emergency procedures.

(2) Review

(a) LORAN navigation.

(b) Search patterns.

(c) Manual and coupled approaches.

(d) Deployment of swimmer/corpsman.

(e) Inland/Maritime survivor recovery.

(f) Use of enroute checklists.

Performance Standard. Pilot shall demonstrate the ability to instruct Search and Rescue maneuvers, including demonstrating and introducing search patterns and techniques, and hover and recovery maneuvers to pilots under instruction.

Ordnance. 4 MK-58 flares.

152. GRADUATE LEVEL COURSES

1. Night Systems SAR Instructor (NSSI).

a. The NSSI course and training codes are listed in the MAWTS-1 Course Catalog. There will be no refly factors for these instructor flights.

b. An NSSI is a NA who has completed the NVG syllabus, certified by a NSI and designated by his squadron commanding officer. Designated NSSIs are qualified to instruct all NVG flights.

c. Previous qualifications represent a wealth of experience in NVG operations that may enhance the capabilities of a SAR unit. Pilots that have completed the SAR and NVG syllabi and meet the following criteria shall be eligible for the NSSI syllabus:

(1) SAR Instructor designation.

(2) Twenty-five hours or more of NVG time.

(3) Ten hours or more of NVG time under low light level conditions.

d. Standardization shall be accomplished during MAWTS-1 certification flights and annual SAR evaluations.

153. SPECIAL TRAINING

1. NATOPS and Instrument Evaluations

a. Purpose. Determine if the pilot is qualified per the criteria contained in the H-46 NATOPS Flight Manual, OPNAVINST 3710.7, and applicable SAR publications.

b. General. SAR check rides should coincide with the annual NATOPS evaluation to the maximum extent possible.

c. Crew Requirements. IP/PUI/CC.

d. Flight Training (4 Flights, 9.0 Hours)

RQD-600 3.0 E 1 ACFT (N)

Goal. Annual NATOPS Evaluation.

Requirement. Proficiency in the utilization of all aspects of the HH-46 as a system. The proficiency expected by the evaluator in this flight shall be commensurate with the experience of the pilot under evaluation. Upon successful completion of this evaluation, a pilot may be designated a HH-46D (non-SAR) HAC and/or SAR H2P at the discretion of the units commanding officer.

Performance Standard. The performance expected by the evaluator in this flight shall be commensurate with the experience level of the pilot under evaluation.

RQD-601 1.5 E 1 ACFT (N)

Goal. Annual Instrument Evaluation.

Requirement. The evaluation shall be conducted per the criteria contained within the Instrument Flight Manual. File and fly an instrument round robin using all navigation equipment available. Evaluate all phases of instrument flight to include precision and non-precision approaches, partial panel, and instrument holding. Demonstrate proficiency in

handling instrument related emergencies to include unusual attitude recoveries.

Performance Standard. Pilot shall demonstrate the ability to plan and execute an instrument flight, conduct instrument approaches, and demonstrate safe performance in handling instrument related emergencies, including unusual attitudes.

RQD-602 3.0 E 1 ACFT

Goal. Evaluate all aspects of the local Day SAR mission for designation as Day SAR qualified Helicopter Aircraft Commander (HAC).

Requirement. The check will be conducted per the criteria contained in the NATOPS Flight Manual, OPNAVINST 3710.7, applicable SAR publications, and will cover all practicable day SAR operations and procedures contained in this syllabus. Upon successful completion of this evaluation, a pilot may be designated Day SAR HAC at the discretion of the unit commanding officer.

Performance Standard. The performance expected by the evaluator in this flight shall be commensurate with the experience level of the pilot under evaluation.

RQD-603 3.0 E 1 ACFT N (NS)

Goal. Evaluate all aspects of the local Night SAR mission for designation as Full SAR qualified HAC.

Requirement. The check will be conducted per the criteria contained in the NATOPS Flight Manual, OPNAVINST 3710.7, applicable SAR publications, and will cover all practicable night SAR operations and procedures contained in this syllabus. Upon successful completion of this evaluation, a pilot may be designated Full SAR Qualified HAC.

Performance Standard. The performance expected by the evaluator in this flight shall be commensurate with the experience level of the pilot under evaluation.

Ordnance. 2 Mk-25/1 Mk-58 flares.

RQD-604 1.5 E 1 ACFT

Goal. Conduct evaluation for designation as a Functional Check Pilot (FCP).

Requirement. Per a locally generated syllabus, conduct an evaluation with a previously designated FCP.

Prerequisite. SAR-206.

Performance Standard. Pilot shall demonstrate the ability to conduct a Full Card Functional Check Flight correctly and efficiently, and demonstrate the ability to troubleshoot aircraft problems.

RQD-640 1.5 E 1 ACFT (N)

Goal. Annual Crew Resource Management (CRM) Evaluation.

Requirement. The evaluation shall be conducted per the criteria contained within OPNAVINST 1542.7C. The flight evaluation may be conducted concurrent with any operational or training flight, including NATOPS evaluation and/or instrument evaluation.

Performance Standard. Demonstrate effective use of the 7 CRM critical skill areas.

160. EXPENDABLE ORDNANCE REQUIREMENTS. These requirements are based on a "per crew" basis per OPNAVNOTE 8010.

ORDNANCE	100 SERIES	200 SERIES	300 SERIES	400 SERIES	600 SERIES	IUT	ANNUAL*
Mk-25 Flares		4	5		2		11
Mk-58 Flares			3		1	4	8

* Annual Ordnance requirements maintain an aircrew member at 85% MRP per T&R Program Manual.

AIRCRAFT: HH-46 (SAR) MOS: 7562 CREW POSITION: PILOT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	SC	R	E	REMARKS
CORE SKILL INTRODUCTION TRAINING									
FAM	l08	1.5	*	1.5	X		X		1 ACFT
EP	l09	1.5	*	1.5	X	X	X		1 ACFT
INST	110	1.5	*	1.5	X		X		1 ACFT
	111	1.5	*	1.5	X		X		1 ACFT (N)
CAL	120	1.5	*	2.0	X		X		1 ACFT
FF	140	1.5	*	2.0	X	X	X		1 ACFT
CORE SKILL BASIC TRAINING									
SAR	200	1.5	365	1.5	X	X	X		1 ACFT
	202	1.5	365	1.5	X	X	X		1 ACFT
	203	1.5	365	2.0	X	X	X		1 ACFT
	204	1.5	365	2.0	X	X	X		1 ACFT
	205	2.0	365	2.0	X	X	X		1 ACFT
	206	1.5	365	2.0	X	X	X		1 ACFT
	207	1.5	365	2.0	X	X	X		1 ACFT
	209	1.5	365	2.0	X	X	X		1 ACFT
CORE SKILL ADVANCED TRAINING									
NVG	300	1.5	365	2.0	X		X		1 ACFT N NS
	301	1.5	365	2.0	X		X		1 ACFT N NS
	302	1.5	365	2.0	X		X		1 ACFT N NS
	303	1.5	365	2.0	X	X	X		1 ACFT N NS
NSAR	321	1.5	365	1.5	X	X	X		1 ACFT N(NS)
	322	1.5	365	1.5	X	X	X		1 ACFT N(NS)
	323	2.0	365	1.5	X	X	X		1 ACFT N(NS)
	324	1.5	365	1.5	X	X	X		1 ACFT N(NS)
	325	1.5	365	2.0	X	X	X		1 ACFT N(NS)
	327	1.5	365	2.0	X	X	X		1 ACFT N(NS)
	328	2.0	365	2.0	X	X	X	X	1 ACFT N(NS)
CORE PLUS TRAINING									
RAP	402	1.5	365	1.0	X	X	X		1 ACFT
FCLP	410	1.5	365	1.0	X		X		1 ACFT
	411	1.5	365	1.0	X		X		1 ACFT N NS
CQ	420	1.5	365	1.0	X		X		1 ACFT
	421	1.5	365	1.0	X		X		1 ACFT N NS
INSTRUCTOR UNDER TRAINING (IUT)									
FAM	500	1.5	*					X	1 ACFT (N)
FF	502	1.5	*					X	1 ACFT (N)
SAR	503	1.5	*					X	1 ACFT (N)

Figure 1-1.--Refly Interval, MRP.

AIRCRAFT: HH-46 (SAR) MOS: 7562 CREW POSITION: PILOT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	SC	R	E	REMARKS
SPECIAL TRAINING									
RQD	600	3.0	365					X	1 ACFT (N)
	601	1.5	365					X	1 ACFT (N)
	602	3.0	365					X	1 ACFT
	603	3.0	365					X	1 ACFT N
	604	1.5						X	1 ACFT
	640	1.5	365					X	1 ACFT (N)

Figure 1-1.--Refly Interval, MRP--Continued.

MOS 7562 FLIGHT UPDATE CHAIN

STAGE	FLIGHT	FLIGHT UPDATED
SAR	200	
	202	200
	203	202, 200
	204	203, 202, 200
	205	203, 202, 200
	206	202, 200
	207	206, 203, 202, 200
	209	207, 206, 203, 202, 200
NVG	300	200
	301	300
	302	301,300
	303	301, 300, 200
NSAR	321	202, 200
	322	321, 203, 202, 200
	323	322, 321, 303, 205, 203, 202, 200
	324	321, 303, 206, 202, 200
	325	324, 322, 321, 303, 207, 206, 203, 202, 200
	327	325, 324, 322, 321, 303, 207, 206, 203, 202, 200
	328	205
RAP	402	203, 202, 200
FCLP	410	
	411	410
CQ	420	410
	421	420, 411, 410
IUT	500	
	502	
	503	(May be used as Annual NATOPS check.)
RQD	600	
	601	
	602	
	603	
	604	
	640	(May be flown in conjunction with any other flight.)

Figure 1-2.--Pilot Flight Update Chaining.

SYLLABUS EVENT CONVERSION MATRIX

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	100 LEVEL		
OFT	100	OFT	100
	101		101
	102		102
	103		103
	110		104
	111		105
	112		106
FAM	100	FAM	108
	101	EP	109
	102		
INST	120	INST	110
	121		111
NFAM	130		
	131		

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	200 LEVEL		
CAL	200	CAL	120
	201		
MAL	210		
	211		
EXT	220	FF	140

Figure 1-3.--Syllabus Conversion Matrix.

SYLLABUS EVENT CONVERSION MATRIX

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	300 LEVEL		
NAV	300	SAR	200
	301		202
	302		
SAR	303		206
	304		203
	305		207
	306	RAP	402
	307	SAR	209
			204
			205
	320	NSAR	321
	321		
	322		324
	323		
	324		
	325		
	326		325
	327		327
	328		328
			322
			323
NVG	330	NVG	300

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	400 LEVEL		
NVG	400	NVG	301
	401		302
			303
FCLP	420	FCLP	410
	421		411
	422		
CQ	423	CQ	420
	424		421
	425		

Figure 1-3.--Syllabus Conversion Matrix--Continued.

SYLLABUS EVENT CONVERSION MATRIX

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	500 LEVEL		
FAM	500	FAM	500
INST	501		
EXT	502	FF	502
SAR	503	SAR	503

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	600 LEVEL		
RQD	600	RQD	600
	601		601
	602		602, 603
	603		604
		CRM	640

Figure 1-3.--Syllabus Conversion Matrix--Continued.

REQUIREMENTS, QUALIFICATIONS & DESIGNATIONS
HAC REVIEW/HAC CHECK FLIGHTS/FCP/FLIGHT LEADERSHIP
Aviation Training Form

Instructor	Unit	Date
Location	Flight Time	NVG Time

BRIEF:						**Comments:**
Preparation	U	BA	A	AA	NA	
Aircraft Load Computation	U	BA	A	AA	NA	
T&R Manual Requirements	U	BA	A	AA	NA	
Aircrew Brief	U	BA	A	AA	NA	
Aircraft Systems Knowledge	U	BA	A	AA	NA	
Emergency Procedures	U	BA	A	AA	NA	
NATOPS	U	BA	A	AA	NA	
Aircraft Maneuvers	U	BA	A	AA	NA	
Aircraft Capabilities & Limits	U	BA	A	AA	NA	
Tactical Knowledge	U	BA	A	AA	NA	
SOP Items	U	BA	A	AA	NA	
Night Ops	U	BA	A	AA	NA	
NVG Ops	U	BA	A	AA	NA	
Instrument Ops	U	BA	A	AA	NA	
Shipboard Ops	U	BA	A	AA	NA	
FLIGHT: Day or Night						
Headwork	U	BA	A	AA	NA	
Basic Air Work	U	BA	A	AA	NA	
Situational Awareness	U	BA	A	AA	NA	
Crew Coordination	U	BA	A	AA	NA	
Communications Procedures	U	BA	A	AA	NA	
Emergency Procedures	U	BA	A	AA	NA	
Preflight/Postflight	U	BA	A	AA	NA	
Aircraft Systems Knowledge	U	BA	A	AA	NA	
SOP Items	U	BA	A	AA	NA	
Course Rules	U	BA	A	AA	NA	
Ground Procedures	U	BA	A	AA	NA	
Fam Maneuvers	U	BA	A	AA	NA	
AFCS-Off Flight	U	BA	A	AA	NA	
Emergency Throttle Ops	U	BA	A	AA	NA	
Practice Autorotations	U	BA	A	AA	NA	
Instrument Procedures	U	BA	A	AA	NA	
Night Ops	U	BA	A	AA	NA	
NVG Ops	U	BA	A	AA	NA	
GAIL Approach	U	BA	A	AA	NA	

PUI:	Training Codes:	RQD	390	391	392	393	600	601	602	603

Aviation Training Form

Instructor
Location

Date
Flight Time

NVG Time
Doppler

DM DC NM NC

ALL FLIGHTS:					
Preparation	U	BA	A	AA	NA
Load Computation	U	BA	A	AA	NA
T&R Requirements	U	BA	A	AA	NA
Aircrew Brief	U	BA	A	AA	NA
Systems Knowledge	U	BA	A	AA	NA
Emergency Procedures	U	BA	A	AA	NA
Taxi	U	BA	A	AA	NA
Basic Air Work	U	BA	A	AA	NA
Headwork	U	BA	A	AA	NA
Course Rules	U	BA	A	AA	NA
SOP Items	U	BA	A	AA	NA

FAMILIARIZATION:					
Minimum Power Take Off	U	BA	A	AA	NA
Obstacle Take Off	U	BA	A	AA	NA
Running Take Off	U	BA	A	AA	NA
Vertical Take Off	U	BA	A	AA	NA
Precision Approach	U	BA	A	AA	NA
Normal Approach	U	BA	A	AA	NA
Autorotation	U	BA	A	AA	NA
Quick Stop	U	BA	A	AA	NA
AFCS Off Flight	U	BA	A	AA	NA
No Hover Landing	U	BA	A	AA	NA

NAVIGATION:					
Map Study	U	BA	A	AA	NA
Terrain Association	U	BA	A	AA	NA
Dead Reckoning	U	BA	A	AA	NA
Proper Use of Nav Equip	U	BA	A	AA	NA

CONFINED AREA LANDINGS:					
Approach	U	BA	A	AA	NA
Power Control	U	BA	A	AA	NA
Airspeed Control	U	BA	A	AA	NA
Cross Wind Take Off / Landing	U	BA	A	AA	NA

SAR Evolutions:					
Headwork	U	BA	A	AA	NA
Transition To a Hover	U	BA	A	AA	NA
Control Over Survivor	U	BA	A	AA	NA
Pickup	U	BA	A	AA	NA

EXTERNAL LOADS:					
Headwork	U	BA	A	AA	NA
Pattern	U	BA	A	AA	NA
Approach	U	BA	A	AA	NA
Transition To a Hover	U	BA	A	AA	NA
Control Over Load	U	BA	A	AA	NA
Hook Up	U	BA	A	AA	NA
Transition To Forward Flight	U	BA	A	AA	NA

NIGHT VISION GOGGLES:					
Taxi					
Hover Work	U	BA	A	AA	NA
Vertical Take Off	U	BA	A	AA	NA
Vertical Landing	U	BA	A	AA	NA
No Hover Landing	U	BA	A	AA	NA
Precision Approach	U	BA	A	AA	NA
Pattern Work	U	BA	A	AA	NA

CARRIER QUALIFICATION:					
Pattern	U	BA	A	AA	NA
Approach	U	BA	A	AA	NA
Take Off	U	BA	A	AA	NA
Landing	U	BA	A	AA	NA
Voice Procedures	U	BA	A	AA	NA

CREW RESOURCE MANAGEMENT					
Decision Making	U	BA	A	AA	NA
Assertiveness	U	BA	A	AA	NA
Mission Analysis	U	BA	A	AA	NA
Communication	U	BA	A	AA	NA
Leadership	U	BA	A	AA	NA
Adaptability / Flexibility	U	BA	A	AA	NA
Situational Awareness	U	BA	A	AA	NA

Comments:

PUI:

Training Code:

FUNCTIONAL CHECK PILOT TRAINING SYLLABUS

Aviation Training Form

Instructor Location	Unit Flight Time	Date

DISCUSS:		**Comments:**
SCREENING OF THE ADB	FCF 01	
QA BRIEF	FCF 01	
FCF CHECKLIST	FCF 01	
STICK POSITION (DASH CONNECTED/DISCONNECTED)	FCF 01	
BLADE TRACKING / ROTOR HEAD BALANCE PROCEDURES	FCF 01	
STICK PLOT PROCEDURES AND ANOMALIES	FCF 01	
AFCS CHECKS	FCF 02	
FLIGHT CONTROL CHANGES / ADJUSTMENTS	FCF 02	
ENGINE SHAFT BALANCE TEST	FCF 02	
ENGINE SETUP	FCF 03	
LOOKOUT DOCTRINE / GAUGE SCAN	FCF 03	
EMERGENCY THROTTLE CHECKS	FCF 03	
FULL CARD CHECK FLIGHTS (A PROFILE)	FCF 04 RQD 604	

INTRODUCE:		
PREFLIGHT, GROUND AND HOVER CHECKS	FCF 01	
STICK POSITION CHECKS	FCF 01	
TRACK AND BALANCE	FCF 01	
STICK PLOT	FCF 01	
MAINTENANCE AUTOROTATION	FCF 01	
FLIGHT CONTROL CHECKS	FCF 02	
ENGINE SHAFT BALANCE	FCF 02	
AFCS HOVER CHECKS	FCF 02	
SPEED TRIM CHECKS (LCT)	FCF 02	
AFCS FORWARD FLIGHT CHECKS	FCF 02	
PMS NOMINAL ADJUSTMENTS	FCF 03	
ENGINE START CHECKS	FCF 03	
ENGINE SHAFT BALANCE	FCF 03	
ENGINE OVERSPEED CHECK	FCF 03	
ZEROIZE TORQUE	FCF 03	
ENGINE ACCELERATION	FCF 03	
SINGLE ENGINE (LOWER) Nf	FCF 03	
TOPPING	FCF 03	**FCF 04 OR RQD 604 MUST BE FLOWN WITH THE AMO. RQD 604 MUST BE FLOWN WITH THE AMO OR THE QAO. FCF 04 AND RQD 604 WILL BE BRIEFED AND CONDUCTED BY THE FCPUT. THE AMO / QAO SHALL ENSURE THAT T & R CODE 604 IS LOGGED IN NALCOMIS FOR THE FINAL FULL CARD FLIGHT.**
T5 LIMITING	FCF 03	
LOAD SHARE	FCF 03	
TORQUE COMPARISON CHECK	FCF 03	
SINGLE / FOUR POINT ENGINE PERFORMANCE CHECK	FCF 03	
EMERGENCY THROTTLE CHECK	FCF 03	
POST FLIGHT CHECKS	FCF 03	

PUI: Training Codes: FCF 01 02 03 04 RQD 604

CHAPTER 2

HH-46D (SAR) CREW CHIEF

FIGURES

*** * N O T E * ***

Aircrews shall include Crew Resource Management techniques as part of their brief.

CHAPTER 2

HH-46D (SAR) CREW CHIEF

200. MARINE SEARCH AND RESCUE UNIT – HH-46D

1. General. The capabilities defined and described in the core capability and unit template sections are provided to ensure each like-SAR unit maintains a common base of training and depth of capabilities. When sources permit, and when, in the judgment of the commander, additional training would significantly increase the unit's Search and Rescue capability, training to a level above these base capabilities is permitted. It is incumbent upon and expected of commanders to balance any increase in the depth of core capabilities against the long-term health and readiness of their unit while staying within resource constraints.

2. Mission. The primary mission of Search and Rescue is to provide heliborne SAR capabilities to tenant aviation units. Additional missions are secondary in nature and shall be accepted on a not-to-interfere basis only.

3. Mission Essential Task List (METL)

a. Provide search and rescue for tenant aircraft.

b. Provide supplemental search and rescue asset for U. S. Coast Guard and U.S. Air Force missions.

c. Provide MEDEVAC capability to local civilian agencies as required, on a not-to-interfere basis.

d. Provide airborne fire-fighting capability for MCAS facilities and to supplement Forest Service assets in the local area.

e. Provide supplemental search and rescue to local civilian agencies for non-law enforcement type missions such as searches, fire fighting, disaster response, or civilian MEDEVAC, when civilian agencies cannot respond.

f. Provide utility and logistics support missions of MCAS activities as directed by the Director of Operations, MCABEAST.

g. Enhance public relations for the Commanding General, MCABEAST through static displays and flight demonstrations as authorized by higher authority.

4. Table of Organization

3 HH-46D helicopters
8 Pilots
9 Crew Chiefs
6 SAR Swimmers
4 SAR Corpsmen

5. Squadron Core Capability

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained search and rescue operations, assuming at least 100% Primary Authorized Allowance (PAA), 90% in reporting status, and 90% T/O on hand in all MOSs. If <90%, core capability will be degraded by like-percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to launch 1 full mission capable aircraft crewed by a fully qualified aircrew at all times. This aircraft must be airborne within 15 minutes of alert when operating under SAR Condition I and 1 hour under SAR Condition II.

201. PROGRAMS OF INSTRUCTION (POI) FOR BASIC AND REFRESHER CREW CHIEFS

WEEKS	COURSE/PHASE	ACTIVITY
1-5	Naval Aircrewman Candidate School	NAS Pensacola
6-8	Ground Training	VMR-1/MCAS Beaufort
9-20	Flight Training	VMR-1/MCAS Beaufort

202. POI FOR SERIES CONVERSION CREW CHIEFS

WEEKS	COURSE/PHASE	ACTIVITY
1-56	Core Plus Training in CH-46E	FMF
57-59	SAR Ground Training	VMR-1/MCAS Beaufort
60-71	SAR Flight Training	VMR-1/MCAS Beaufort

203. POI FOR CREW CHIEF INSTRUCTOR UNDER TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1-6	Flight Training	VMR-1/MCAS Beaufort

210. GROUND TRAINING COURSES OF INSTRUCTION

COURSE/ PHASE	ACTIVITY
Naval Aircrewman Candidate School	NAS Pensacola
Rappel Indoctrination Course	HMT-303

*Completion of the Rappel Indoctrination Course is highly recommended but not required.

211. SQUADRON LEVEL TRAINING

NATOPS Flight Manual and Crew Chief Pocket Checklist
Safety Publications
Aircraft Mishaps
Survival and Rescue Equipment
Utilization and Limitations of SAR Equipment
Ground-to-Air Signals
CPR Certification
First Aid Training
Search and Rescue Techniques
Ordnance Safety
HIRA Ground Syllabus
FCF Syllabus

220. FLIGHT TRAINING FOR BASIC AND REFRESHER CREW CHIEFS. Basic and Refresher Crew Chiefs in model H-46 helicopter will be programmed to fly the complete program of instruction, regardless of qualifications. All initial flights shall be flown with a designated NATOPS Instructor.

1. Core Skill Introduction Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification			50.0
Familiarization	2	3.0	4.0
Day Confined Area Landings	1	1.5	2.0
Internal Cargo/Range Extension Tank	1	1.5	2.0
Firefighting	1	1.5	2.0
	5	**7.5**	**60.0**

2. Core Skill Basic Training

STAGE	FLIGHTS	HOURS	PERCENT
Day Search and Rescue	9	14.0	15.0
	9	**14.0**	**15.0**

3. Core Skill Advanced Training

STAGE	FLIGHTS	HOURS	PERCENT
Night Vision Goggles	4	6.0	6.5
Night Search and Rescue	8	12.5	13.5
	12	**18.5**	**20.0**

4. Core Plus Training

STAGE	FLIGHTS	HOURS	PERCENT
Helicopter Inland Rescue	2	3.0	1.0
Carrier Qualification	4	6.0	4.0
	6	**9.0**	**5.0**
Total	**32**	**49.0**	**100.0**
5. Crew Chief IUT	**3**	**6.0**	
6. Special Training	**4**	**7.5**	

221. FLIGHT TRAINING FOR SERIES CONVERSION (SC) CREW CHIEFS

a. Conversion Crew Chiefs that are current in model H-46 will be programmed to fly the SC syllabus.

b. Core Skill Introduction, NVG Core Skill Advanced, and Core Skill Plus qualifications that are current per this Manual and the CH-46E T&R Manual remain current upon transfer to the HH-46D, upon approval of the SAR unit commanding officer.

c. All initial flights will be flown with a designated NATOPS Instructor.

1. Core Skill Introduction Training

STAGE	FLIGHTS	HOURS
Basic Qualification		
Familiarization	1	1.5
Internal Cargo/Range Extension Tank	1	1.5
Firefighting	1	1.5
	3	**4.5**

2. Core Skill Basic Training

STAGE	FLIGHTS	HOURS
Day Search and Rescue	9	14.0
	9	**14.0**

3. Core Skill Advanced Training

STAGE	FLIGHTS	HOURS
Night Vision Goggles	2	3.0
Night Search and Rescue	8	12.5
	10	**15.5**

4. Core Plus Training

STAGE	FLIGHTS	HOURS
Helicopter Inland Rescue	2	3.0
Carrier Qualification	4	6.0
	6	**9.0**
Total	**28**	**43.0**
5. Crew Chief IUT	**3**	**6.0**
6. Special Training	**4**	**7.5**

230. SIMULATOR TRAINING. Not Applicable.

240. FLIGHT PERFORMANCE REQUIREMENTS

1. Purpose. Become familiar with aircraft limitations and emergency procedures. Develop proficiency in servicing, loading, in-flight procedures, and knowledge of safety regulations that pertain to operation and maintenance. Become familiar with SAR procedures and requirements.

2. General

a. Personnel shall complete the Naval Aircrewman Candidate School.

b. Crew chiefs who are current in model H-46 will be programmed to fly the SC syllabus.

c. All other crew chiefs will be programmed to fly the complete POI regardless of qualifications.

d. All initial flights shall be flown with a designated NATOPS Instructor.

e. Local commands are granted the authority to waive requirements that are not applicable to the local operating environment.

f. All flights shall terminate with a comprehensive debrief with emphasis on the aircrew's performance using all evaluation techniques.

g. Aircrews shall fly events annotated with an N at least 30 minutes after official sunset. Aircrews may fly events annotated with (N) at night.

h. Aircrews shall fly events annotated with an NS with NVGs. Aircrews may fly events with (NS) with the option of using NVGs.

i. All flights annotated with an E shall be evaluated per T&R Program Manual.

3. Re-fly Interval. Figure 2-1 shows re-fly interval and Mission Readiness Percentage for MOS 6172.

4. Aircrew Evaluation Flights. All crew chiefs are required to have a NATOPS evaluation form annually upon completion of the following:

a. NATOPS Evaluation flights (RQD-600).

b. Search and Rescue/NATOPS Evaluation flights (RQD-602).

c. Crew Resource Management Evaluation (RQD-640).

5. Crew Resource Management (CRM). Aircrews shall include CRM techniques as part of their brief.

241. CORE SKILL INTRODUCTION TRAINING

1. Familiarization

a. Purpose. Familiarize the trainee with HH-46 operations and procedures.

b. General. These flights may be flown on any flight of the pilot syllabus.

c. Crew Requirement. CCI/CCUI.

d. Flight Training (3 flights, 4.5 hours)

FAM-108	1.5	T,R,SC	1 ACFT

Goal. Introduce HH-46D emergency procedures and characteristics. Discuss CRM.

Requirements. The CCUI will act in the capacity of the crew chief. The CC will instruct the CCUI in the duties of the crew chief, to include Look-out Doctrine, Daily inspection, and turn-around procedures. The trainee should accompany the crew chief during the Daily and turn-around inspections.

Performance Standard. CCUI shall be able to identify differences between HH-46D and CH-46E series helicopters, and perform familiarization maneuvers per NATOPS Manual.

EP-109 1.5 T,R 1 ACFT

Goal. Further the CCUI's knowledge and proficiency of HH-46D Emergency Procedures.

Requirements. The CCUI will act in the capacity of the crew chief. The CC will discuss emergency procedures in-depth, to include engine fire in-flight, engine fire on ground, fuselage fire in-flight, fuselage fire on ground, emergency landings (land and water), and smoke and fume elimination.

Performance Standard. CCUI shall demonstrate knowledge of aircraft systems, perform basic FAM maneuvers, and be able to satisfactorily perform emergency procedures per NATOPS manual.

CAL-120 1.5 T, R 1 ACFT

Goal. Develop proficiency in Confined Area Operations.

Requirements. The CCUI will act in the capacity of the crew chief. The CCUI will develop and demonstrate proficiency in the crew coordination requirements of Confined Area Operations. Emphasize aircraft, terrain, and obstacle clearance during take-off and landing.

Performance Standard. CCUI will demonstrate the ability to successfully crew the aircraft to the deck for a minimum of 5 landings.

2. Internal Loads

a. Purpose. Review procedures for the loading, securing, and transportation of internal cargo and personnel. Review procedures for the loading, servicing, and operation of the internal Range Extension Fuel Tank.

b. General. These flights may be flown with any flight where internal cargo, passengers, and Range Extension Fuel Tanks are carried and/or utilized.

c. Crew Requirement. CCI/CCUI.

d. Flight Training (1 flight, 1.5 hours)

INT-130 1.5 T,R,SC 1 ACFT

Goal. Review procedures for internal cargo loading, security, and unloading. Review procedures for passenger embarkation, debarkation, briefing and safety procedures.

Requirement. CCUI will act in the capacity of the crew chief. CCUI will observe and assist in the proper handling of internal cargo and passengers. CCUI will demonstrate the proper procedures for servicing and operation of the Range Extension Fuel Tank. Review emergency landing/ditching procedures.

Performance Standard. CCUI will demonstrate the ability to safely embark and debark passengers, litter patients, and cargo. CCUI will demonstrate the ability to safely refuel and manage in-flight responsibilities for the internal fuel tank.

3. Fire Fighting

a. Purpose. Develop the ability to conduct water bucket operations.

b. General. These flights may be flown in conjunction with fire fighting flights in the pilot syllabus.

c. Crew Requirement. CCI/ CCUI.

d. Flight Training (1 flight, 1.5 hours)

FF-140 1.5 T,R,SC 1 ACFT

Goal. Review cargo hook and Bambi Bucket hook-up procedures, verbal commands and communication, and water bucket operations. Review emergency external disconnect procedures.

Requirement. CCUI will act in the capacity of the crew chief. CCUI will assist the crew chief in external load operations. Instruct CCUI in water bucket operations, verbal communication, emergency disconnect procedures, and review static discharge precautions.

Performance Standard. CCUI shall be able to safely fill Bambi Bucket, complete minimum of 5 hookups and water drops, and deliver water to fire within 5 meters of intended point of impact.

242. CORE SKILL BASIC TRAINING

1. Day Search and Rescue

a. Purpose. Familiarize CCUI with the Search and Rescue (SAR) mission, aircraft limitations, and emergency procedures, develop proficiency in servicing, loading, in-flight procedures, SAR procedures and requirements, SAR equipment limitations, and knowledge of safety regulations.

b. General

(1) The T&R Program Manual addresses the commanding officer's authority to modify this training as required. Personnel will complete the appropriate NAMTRAGRUDET and NATOPS ground school syllabus prior to commencing the flight training syllabus. A NATOPS Instructor will monitor the trainee's progress during the flight training syllabus.

(2) Local commands are granted the authority to designate crew chiefs in model HH-46 upon completion of the flights listed in paragraph 242.1.c.

c. Prerequisite

(1) The following flights of the HH-46 crew chief syllabus shall be satisfactorily completed by Basic and Refresher crew chiefs not current in model H-46 prior to commencing the SAR qualification training phase (7 flights, 10.5 hours): FAM-100, EP-101, CAL-120, INT-130, FF-140, NVG-300, and RQD-600.

(2) The following flights of the HH-46 crew chief syllabus shall be completed by Series Conversion crew chiefs who are current in model H-46 prior to commencing the SAR qualification training phase (5 flights, 7.5 hours): FAM-100, INT-130, FF-140, NVG-300, and RQD-600.

d. Ground Training. Additional ground training requirements for all SAR crew chiefs are as follows:

(1) Utilization and limitations of SAR equipment.

(2) Search and Rescue techniques.

(3) Ground-to-air signals to include body, panel, lighting signals, and international ground-to-air emergency codes.

e. Crew Requirement. CCI/CCUI.

f. Flight Training (9 flights, 14 hours)

SAR-200 1.5 T,R,SC 1 ACFT

Goal. Fly an extended navigation flight and introduce search patterns. Assist the pilot with map and GPS navigation.

Requirement. Assist the pilot with map and GPS navigation by identifying direction and key terrain features. Review "away from base" re-fueling and supply requisitioning procedures. Assist the pilot in various search patterns by providing appropriate lookout doctrine.

Performance Standard. CCUI shall safely assist the pilots in conducting a search pattern consisting of a minimum of 5 checkpoints, maintain within 500 meters of course line, altitude within 50 feet, and airspeed within 10 knots.

SAR-202 1.5 T,R,SC 1 ACFT

Goal. Conduct day, overland SAR search and approach training.

Requirement. CCI will review standard ICS voice communications, introduce and demonstrate the crew chief's Remote Hover Coupler Station, and discuss vertigo. The CCUI, acting in the capacity of crew chief, will demonstrate crew chief duties during day, overland search operations, day manual and coupled Doppler approaches. The CCUI will complete a minimum of 2 day manual and 2 day coupled approaches.

Performance Standard. CCUI shall assist the pilots in conducting a search pattern consisting of a minimum of 5 checkpoints, and maintain within 500 meters of course line. CCUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point.

SAR-203 1.5 T,R,SC 1 ACFT

Goal. Conduct day overland hoisting operations utilizing the Rescue Strop, Forest Penetrator, Rescue Litter, MEDEVAC Litter, Rescue Net, and Hoisting Vest (if available).

Requirement. The CCI will introduce overland SAR procedures per NWP-3-50, utilization of SAR equipment, introduce use of Quick Splice and Chicago Grip. The CCUI, acting in the capacity of crew chief, will demonstrate the deployment and recovery of the Rescue Strop, Forest Penetrator, Rescue Litter, MEDEVAC Litter, Rescue Net, and Hoisting Vest in a confined area. Demonstrate the use of the Quick Splice and Chicago Grip. Review standard ICS voice communications and safety procedures. Review hand, arm, and Aldis Lamp signals.

Prerequisite. CAL-120.

Performance Standard. CCUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations utilizing the Rescue Strop, Forest Penetrator, Rescue Litter, MEDEVAC Litter, Rescue Net, and Hoisting Vest.

SAR-204 1.5 T,R,SC 1 ACFT

Goal. Conduct day hoisting operations with rescue devices utilizing the internal winch through the cabin floor rescue hatch and/or aft cargo hatch.

Requirement. The CCUI, acting in the capacity of crew chief, will demonstrate hoisting operations with rescue devices utilizing the cabin floor rescue hatch and aft cargo hatch in a confined area. Review over-land SAR procedures per NWP-3-50. Review standard ICS voice communications and safety procedures. Review hand, arm, and Aldis Lamp signals.

Prerequisite. CAL-120, SAR-203.

Performance Standard. CCUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations utilizing the Rescue Strop, Forest Penetrator, Rescue Litter, MEDEVAC Litter, Rescue Net, and Hoisting Vest.

SAR-205 2.0 T,R,SC 1 ACFT

Goal. Conduct day, over-land SAR exercise. Assist the pilots with navigation and search. Prepare the aircraft for accepting patients and/or survivors. Assist the RAC and IFMT with transporting patient/survivor to helicopter.

Requirement. Review NAV-200 and SAR-203. CCUI will act in the capacity of the crew chief. CCUI will demonstrate inland SAR procedures per NWP-3-50. Demonstrate the deployment and recovery of rescue devices. Demonstrate standard ICS voice communications and safety procedures. Demonstrate hand, arm, and Aldis Lamp signals.

Prerequisite. SAR-200, SAR-202, SAR-203, SAR-204.

Performance Standard. CCUI shall assist the pilots in navigation, provide calls to the pilot to conduct a hover for crewmember deployment maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations, assist the RS and IFMT with patient transport to helicopter and secure patient into litter stanchions as required.

SAR-206 1.5 T,R,SC 1 ACFT

Goal. Conduct day, maritime SAR approach training.

Requirement. CCUI will act in the capacity of the crew chief. CCUI will demonstrate the duties of the crew chief during day, manual and coupled Doppler approaches. Review standard ICS voice communications. CCI will introduce and discuss flare deployment and vertigo. Introduce and demonstrate the Remote Hover Coupler Station. CCUI will complete a minimum of 2 day manual and 2 day coupled approaches.

Prerequisite. SAR-202.

Performance Standard. CCUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations utilizing the Rescue Strop, Rescue Litter, MEDEVAC Litter, and Rescue Net. CCUI will maintain a hover utilizing the Remote Hover Coupler Station, and maintain within 2 meters of hover point.

SAR-207 1.5 T,R,SC 1 ACFT

Goal. Conduct day, swimmer deployments and recoveries utilizing the Rescue Strop, Rescue Seat, and Rescue Net.

Requirement. CCUI will act in the capacity of the crew chief. Review deployment and recovery procedures of rescue swimmer per NWP-3-50 and local SOP. Deploy and recover the rescue swimmer and simulated survivor(s) utilizing the Rescue Strop, Rescue Seat, and Rescue Net. Perform a short-haul operation. Review flare deployment and safety. Review standard ICS voice communications and safety procedures. Review hand, arm, and Aldis Lamp signals. Review operation of the crew chief Remote Hover Coupler Station.

Ordnance. 2 x MK-25/L and/or MK-58 flares.

Prerequisite. SAR-202, SAR-203, SAR-206.

Performance Standard. CCUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations utilizing the Rescue Strop, Rescue Seat, and Rescue Net. CCUI will conduct 2 hovers utilizing the Remote Hover Coupler Station, and maintain hover within 2 meters of intended hover point.

SAR-208 1.5 T,R,SC 1 ACFT

Goal. Conduct day, swimmer deployments and recoveries utilizing the Rescue Litter and MEDEVAC Litter.

Requirement. CCUI will act in the capacity of the crew chief. Review deployment and recovery procedures of rescue swimmer per NWP-3-50 and local SOP. Deploy and recover the rescue swimmer and simulated survivor(s) utilizing the Rescue Litter and MEDEVAC Litter. Demonstrate proper utilization of the Trail Line assembly. Review standard ICS voice communication and safety procedures. Review hand, arm, and Aldis Lamp signals. Review operation of the Remote Hover Coupler Station. Review flare deployment and safety.

Ordnance. 1 x MK-25/L and 1 x MK-58 flare minimum.

Prerequisite. SAR-202, SAR-203, SAR-206, SAR-207.

Performance Standard. CCUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations utilizing the Rescue litter, and MEDEVAC litter. CCUI will conduct 2 hovers utilizing the Remote Hover Coupler Station, and maintain hover within 2 meters of intended hover point.

SAR-209 1.5 T,R,SC 1 ACFT

Goal. Conduct SAR hoist training from a boat or ship.

Requirement. CCUI will act in the capacity of the crew chief. Conduct hoisting operations from a boat or ship with emphasis on the Rescue Litter, MEDEVAC Litter and Trail Line assembly. Discuss normal and emergency procedures related to shipboard hoisting operations. Emphasize Crew Coordination and Situational

Awareness as part of CRM brief. Review standard ICS voice communications and safety procedures. Review hand, arm, and Aldis Lamp signals.

Prerequisite. SAR-206, SAR-207, SAR-208.

Performance Standard. CCUI shall provide calls to the pilot to conduct a hover over a boat for crewmember deployment, maintaining within 1 meter of hover point. The CCUI will safely conduct hoisting operations utilizing the Rescue litter, MEDEVAC litter, and trail line assembly.

243. CORE SKILL ADVANCED TRAINING

1. Night Vision Goggle (NVG) Operations

a. Purpose. Develop proficiency required to safely conduct basic operations, navigation, and search patterns utilizing NVGs.

b. Safety. Rappels and short-hauls shall not be conducted while using NVGs.

c. Ground Training. Trainees shall attend a Naval Aeromedical Night Lab prior to commencing NVG training.

d. Crew Requirement. CCNSSI/CCUI.

e. Flight Training (4 flights, 6.0 hours)

NVG-300 1.5 T,R 1 ACFT NS

Goal. Introduce NVG low work and touch & go landings in ambient light conditions of .0022 LUX or greater.

Requirement

(1) Introduce wear and use of NVGs during low work and touch and go landings.

(2) Brief/Discuss

(a) Use and limitations of NVGs.

(b) NVG tube and battery failures.

(c) Lookout Doctrine.

(d) NVG scan patterns.

(e) Obstacle clearance.

(f) Emergency procedures.

Performance Standard. CCUI shall be able to safely perform familiarization maneuvers while on NVGs per NFM, and MAWTS-1 NVG Manual.

NVG-301 1.5 T,R 1 ACFT NS

Goal. Develop proficiency in conducting confined area landings and land SAR operations while utilizing NVGs.

Requirement

(1) Introduce confined area landings.

(2) Brief/discuss

(a) Obstacle clearance.

(b) Terrain suitability.

(c) Rate of closure.

(d) Loss of depth perception.

(e) Lookout Doctrine.

(f) NVG scan techniques.

(g) Vertigo.

(h) Emergency procedures.

Prerequisite. NVG-300.

Performance Standard. CCUI will demonstrate the ability to successfully crew the aircraft to the deck for a minimum of 5 landings while wearing NVGs.

NVG-302 1.5 T,R 1 ACFT NS

Goal. Develop proficiency with NVGs during SAR operations under low light level conditions.

Requirement. Introduce the use of NVGs while conducting search patterns for maritime SAR. Introduce operation and limitations of the Night Sun searchlight. Deploy MK-25/L and/or MK-58 flares to mark a simulated survivors position.

Brief /Discuss

(a) Lookout Doctrine.

(b) NVG scan techniques.

(c) Night Sun search light and its effects on NVGs.

(d) Flare deployment.

(e) Vertigo.

(f) Emergency procedures.

Ordnance. 1 x MK-25/L and 1 x MK-58 flare minimum.

Prerequisite. NVG-300.

Performance Standard. CCUI will demonstrate the ability to successfully crew the aircraft to the deck for a minimum of 5 landings while wearing NVGs under low level conditions.

NVG-303 1.5 T,R,SC 1 ACFT NS

Goal. Fly a night extended navigation and search pattern flight using NVGs.

Requirement. CCUI will act in the capacity of the crew chief. CCUI will demonstrate proficiency while utilizing NVGs during navigation and search patterns. CCUI will assist pilots with navigation by map and terrain features. Demonstrate operation and limitations of Night Sun search light during search patterns.

Brief/Discuss

(a) Lookout Doctrine.

(b) NVG scan techniques.

(c) Night Sun search light and it’s effects on NVGs.

(d) Vertigo.

(e) Emergency procedures.

Prerequisite. NVG-300, NVG-302.

Performance Standard. CCUI shall demonstrate ability to assist pilots in search pattern, maintain good search doctrine, assist pilots to remain oriented on route within 500 meters, ensure effective CRM for navigation and obstacle clearance, and utilize proper terminology.

2. Night Search and Rescue

a. Purpose. Develop the trainee’s proficiency in loading, in-flight procedures, SAR procedures and requirements, SAR equipment utilization and limitations, and knowledge of safety regulations in the night environment.

b. Safety. Rappels and short-hauls shall not be conducted while using NVGs.

c. Crew Requirement. CCNSSI/CCUI.

d. Prerequisite. Prior to commencing any night SAR training the following flights shall be completed: NAV-200, NVG-300, NVG-302, NVG-303.

e. Flight Training (8 flights, 12.5 Hours)

NSAR-321 1.5 T,R,SC 1 ACFT N (NS)

Goal. Conduct night, overland SAR search and approach training.

Requirement. The CCUI, acting in the capacity of the crew chief, will demonstrate the crew chiefs duties during night, overland search operations and approach training utilizing standard ICS voice communications, the Night Sun search light, and the Remote Hover Coupler Station. The CCUI will complete a minimum of 2 night manual approaches.

Prerequisite. SAR-202.

Performance Standard. CCUI shall assist the pilots in conducting a search pattern consisting of a minimum of 5 checkpoints, maintaining within 500 meters of course line. CCUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point.

NSAR-322 1.5 T,R,SC 1 ACFT N (NS)

Goal. Conduct night hoisting operations utilizing the Rescue Strop, Forest Penetrator, Rescue Litter, MEDEVAC Litter, Rescue Net, and Hoisting Vest (if available).

Requirement. The CCNSSI will introduce night, overland SAR procedures per NWP-3-50, utilization of SAR equipment, and utilization of chemical lights and chemical light straps. The CCUI, acting in the capacity of the crew chief, will demonstrate the deployment and recovery of the Rescue Strop, Forest Penetrator, Rescue Litter, MEDEVAC Litter, Rescue Net, and Hoisting Vest in a confined area. Review standard ICS voice communications and safety procedures. Review hand, arm, and Aldis Lamp signals.

Prerequisite. SAR-203.

Performance Standard. CCUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations utilizing the Rescue Strop, Forest Penetrator, Rescue Litter, MEDEVAC Litter, Rescue Net, and Hoisting Vest.

NSAR-323 2.0 T,R,SC 1 ACFT N (NS)

Goal. Conduct night, overland SAR exercise. Assist the pilots with navigation and search. Prepare the aircraft for accepting patients and/or survivors. Assist the RAC and IFMT with transporting patient/survivor to helicopter.

Requirement. Review NVG-303 and SAR-322. The CCUI, acting in the capacity of the crew chief, will demonstrate inland SAR procedures per NWP-3-50. Demonstrate the deployment and recovery of rescue devices. Demonstrate standard ICS voice communications. Demonstrate hand, arm, and Aldis Lamp signals.

Demonstrate proper use and placement of the chemical lights and chemical light straps.

Prerequisite. SAR-205, NVG-300, NVG-302, NVG-303, SAR-321, SAR-322.

Performance Standard. CCUI shall assist the pilots in navigation, provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations, assist the RS and IFMT with patient transport to helicopter and secure patient into litter stanchions as required.

NSAR-324 1.5 T,R,SC 1 ACFT N (NS)

Goal. Conduct night, maritime SAR approach training.

Requirement. The CCNSSI will introduce night Doppler approaches and flare deployment, and discuss vertigo. The CCUI, acting in the capacity of the crew chief, will demonstrate the duties of the crew chief during night, manual and coupled Doppler approaches. Demonstrate use of the Remote Hover Coupler Station. Review standard ICS voice communications and safety procedures. The CCUI will complete a minimum of 2 night manual, and 2 night coupled approaches.

Ordnance. 2 x MK-25/L and 2 x MK-58 flares minimum.

Prerequisite. SAR-206.

Performance Standard. CCUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations utilizing the Rescue Strop, Rescue Litter, MEDEVAC Litter, Rescue Net. CCUI will maintain a hover utilizing the Remote Hover Coupler Station, and maintain within 2 meters of hover point.

NSAR-325 1.5 T,R,SC 1 ACFT N (NS)

Goal. Conduct night, swimmer deployments and recoveries utilizing the Rescue Strop, Rescue Seat, and Rescue Net.

Requirement. Review deployment and recovery procedures of rescue swimmer per NWP-3-50 and local SOP. The CCUI, acting in the capacity of the crew chief, will deploy and recover the rescue swimmer and simulated survivor(s) utilizing the Rescue Strop, Rescue Seat, and Rescue Net. Demonstrate proper flare deployment to mark swimmer/survivor position. Perform a short-haul operation. Review standard ICS voice communications and safety procedures. Review hand, arm, and Aldis Lamp signals. Review operation of the Remote Hover Coupler Station. Review flare deployment and safety.

Ordnance. 1 x MK-25/L and 1 x MK-58 flare minimum.

Prerequisite. SAR-207, SAR-324.

Performance Standard. CCUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations utilizing the Rescue Strop, Rescue Seat, and Rescue Net. CCUI will conduct 2 hovers utilizing the Remote Hover Coupler Station, and maintain hover within 2 meters of intended hover point.

NSAR-326 1.5 T,R,SC 1 ACFT N (NS)

Goal. Conduct night swimmer deployments and recoveries utilizing the Rescue Litter and MEDEVAC Litter.

Requirement. Review deployment and recovery procedures of rescue swimmer per NWP-3-50 and local SOP. The CCUI, acting in the capacity of the crew chief, will deploy and recover the rescue swimmer and simulated survivor(s) utilizing the Rescue Litter and MEDEVAC Litter. Demonstrate proper utilization of the Trail Line assembly. Demonstrate proper deployment of flares to mark swimmer/survivor position. Review standard ICS voice communications and safety procedures. Review hand, arm, and Aldis Lamp signals. Review operation of the Remote Hover Coupler Station. Review flare deployment and safety.

Ordnance. 1 x MK-25/L and 1 x MK-58 flare minimum.

Prerequisite. SAR-208, SAR-324.

Performance Standard. CCUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations utilizing the Rescue litter and MEDEVAC litter. CCUI will conduct 2 hovers utilizing the Remote Hover Coupler Station, and maintain hover within 2 meters of intended hover point.

NSAR-327 1.5 T,R,SC 1 ACFT N (NS)

Goal. Conduct night, SAR hoist training from a boat or ship.

Requirement. The CCUI will act in the capacity of the crew chief. Conduct hoisting operations from a boat or ship with emphasis on the Rescue Litter, MEDEVAC Litter, and Trail Line assembly. Discuss normal and emergency procedures related to shipboard hoisting operations. Emphasize crew coordination and situational awareness as part of CRM brief. Review standard ICS voice communication and safety procedures. Review hand, arm, and Aldis Lamp signals. Review operation of the Remote Hover Coupler Station.

Prerequisite. SAR-209, SAR-325, SAR-326.

Performance Standard. CCUI shall provide calls to the pilot to conduct a hover over a boat for crewmember deployment, maintaining within 1 meter of hover point. The CCUI will safely conduct hoisting operations utilizing the Rescue litter, MEDEVAC litter, and trail line assembly.

SAR-328 2.0 T,R,SC E 1 ACFT (N) (NS)

Goal. Participate in a SAR exercise. This flight may be flown either day or night.

Requirement. The CCUI, acting in the capacity of the crew chief, will demonstrate proper utilization of rescue devices. Demonstrate proper deployment and recovery of rescue personnel and/or survivors. Demonstrate proper flare deployment. Demonstrate proper ICS voice communication and safety procedures. Demonstrate hand, arm, and Aldis Lamp signals. Demonstrate operation of the Remote Hover Coupler Station.

Ordnance. 1 x MK-25/L and 1 x MK-58 flare minimum.

Prerequisite. SAR-206, SAR-207, SAR-208, SAR-209, SAR-324, SAR-325, SAR-326, SAR-327.

Performance Standard. CCUI shall assist the pilots in navigation, provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The CCUI will safely conduct hoisting operations, assist the RS and IFMT with patient transport to helicopter and secure patient into litter stanchions as required.

244. CORE PLUS TRAINING

1. Helicopter Inland Rescue Aircrewman (HIRA) Rappel Operations

a. Purpose. Develop knowledge and proficiency of rappelling equipment, proper rigging, and safety checks during SAR rappelling operations.

b. Safety. Hoists, rappels, and short-hauls shall not be conducted while using NVGs.

c. Crew Requirement. HIRAI/CCUI.

d. Prerequisite. Prior to commencing rappel operations the trainee must complete the HIRA Ground Training Syllabus taught by a HIRA Instructor. Attendance at the Rappel Indoctrination Course at HMT-303 is highly recommended, but not required. Crew chiefs who attend the Rappel Indoctrination Course shall complete the entire Rescue Aircrewman (RAC) or SAR Medical Technician (SMT) HIRA syllabus.

d. Flight Training (2 flights, 3 hours)

RAP-400 1.5 1 ACFT

Goal. Introduce SAR rappelling operations.

Requirement. Conduct a minimum of 2 standard rappels. Review deck set-up and boom rigging, tending the belay line and safety checks. Emphasize terrain clearance and obstacle avoidance. Ensure CCUI is proficient in safety checks, emergency procedures and all rappel gear. Review standard ICS voice communications and safety procedures. Review hand and arm signals.

Prerequisite. Completion of the HIRA Ground Syllabus taught by a HIRA NATOPS Instructor.

Performance Standard. CCUI shall properly set up rappel rope and belay line rigging and conduct final safety checks on crewman conducting rappel operations.

RAP-402 1.5 T,R,SC 1 ACFT

Goal. Practice SAR rappelling operations.

Requirement. Conduct a minimum of 2 standard rappels, 1 rappel short-haul, and 1 hoist short-haul. Review deck set-up and boom rigging, tending the belay line and safety checks. Emphasize terrain clearance and obstacle avoidance. Ensure CCUI is proficient in safety checks, emergency procedures, and all rappel gear. Review standard ICS voice communications and safety procedures. Review hand and arm signals.

Prerequisite. Completion of the HIRA Ground Syllabus taught by a HIRA Instructor.

Performance Standard. CCUI shall properly set up rappel rope and belay line rigging and conduct final safety checks on crewman conducting rappel operations, and safely conduct short haul of simulated survivor in rescue litter.

2. Carrier Qualification

a. Purpose. Qualify during day and night (NVG) shipboard landings.

b. General. Training includes FCLP/CQ NVG operations. Extended searches may require shipboard operations for refueling, casualty recovery, and/ or remote site launches. The benefits of NVG operations cannot be over emphasized, and every effort should be made to ensure all crew members are SAR Night Systems Qualified (NSQ).

(1) Refer to appropriate NATOPS Manual for carrier operations.

(2) Minimum of 5 approaches for each CQ flight.

c. Crew Requirement

(1) Day flights. CCI/CCUI.

(2) Night flights. CCNSSI/CCUI.

d. Flight Training (4 flights, 6 hours)

FCLP-410 1.5 T,R 1 ACFT

Goal. Conduct day, carrier pattern familiarization.

Requirement. Introduce day, FCLP patterns, approaches, and emergency procedures peculiar to shipboard operations. Discuss aircrew coordination, verbal/visual communications used during

shipboard landings and launches, LSE signals, water landing/ditching, and aircraft lighting.

Performance Standard. The CCUI, acting in the capacity of the crew chief, shall demonstrate the ability/knowledge to perform shipboard flight operations to include LSE hand and arm signals.

FCLP-411 1.5 T,R 1 ACFT NS

Goal. Conduct NVG carrier pattern familiarization.

Requirement. Introduce NVG FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations. Discuss aircrew coordination, crew comfort levels, situational awareness, verbal/visual communications used during shipboard landings and launches, LSE signals, water landing/ditching, and aircraft lighting.

Performance Standard. The CCUI, acting in the capacity of the crew chief, shall demonstrate the ability/knowledge to perform night shipboard flight operations to include night LSE hand and arm signals.

CQ-420 1.5 Hours T,R 1 ACFT

Goal. Conduct day, carrier qualifications.

Requirement. Introduce CQ patterns, approaches, landings, and emergency procedures particular to shipboard operations. Discuss height over various decks, aircrew coordination, verbal/visual communications used during shipboard landings and launches, LSE signals, water landing/ditching, and aircraft lighting. Introduce day carrier qualification per NATOPS.

Prerequisite. FCLP-410.

Performance Standard. The CCUI, acting in the capacity of the crew chief, shall demonstrate the ability/knowledge to perform shipboard flight operations to include LSE hand and arm signals.

CQ-421 1.5 Hours T,R 1 ACFT NS

Goal. Conduct NVG carrier qualifications.

Requirement. Introduce NVG CQ patterns, approaches, landings, and emergency procedures particular to shipboard operations. Discuss height over various decks, deck lighting, aircrew coordination, verbal/visual communications used during shipboard landings and launches, LSE signals, water landing/ditching, and aircraft lighting. Introduce NVG CQs per NATOPS.

Prerequisite. FCLP-411.

Performance Standard. The CCUI, acting in the capacity of the crew chief, shall demonstrate the ability/knowledge to perform night shipboard flight operations to include night LSE hand and arm signals.

250. SPECIAL SIMULATOR PERFORMANCE REQUIREMENTS. Not Applicable.

251. CREW CHIEF INSTRUCTOR UNDER TRAINING (CCIUT)

1. Crew Chief Instructor Under Training

a. Purpose. Standardize the procedures for qualifying instructors within individual units.

b. General

(1) The CCIUT must demonstrate proficiency in instructing all evolutions in this stage.

2. Upon completion of this stage the CCIUT shall be designated a Crew Chief Instructor (CCI).

c. Crew Requirements. CCI/CCIUT.

d. Prerequisites. All Core Skill Intro, Basic, and Advanced Training must be complete.

e. Flight Training (3 flights, 6 hours)

IUT-500 1.5 Hours E 1 ACFT

Goal. Demonstrate instructional techniques during day FAM/CAL/INT sorties.

Requirement. CCIUT will demonstrate instructional techniques in crew responsibilities during preflight, start, taxi, take-off, landing, in-flight emergency procedures, ICS procedures, and confined area landings.

IUT-502 1.5 Hours E 1 ACFT

Goal. Demonstrate instructional techniques during water bucket operations.

Requirement. The CCIUT will demonstrate instructional techniques during water bucket operations emphasizing cargo hook operation and limitations, load stability, emergency procedures, lookout doctrine, crew coordination, ICS procedures, and obstacle clearance.

IUT-503 3.0 Hours E 1 ACFT

Goal. Demonstrate instructional techniques during SAR operations.

Requirements. The CCIUT will demonstrate instructional techniques in crew responsibilities and procedures during SAR operations, emphasizing SAR procedures, hoist operations, crew coordination, safety, ICS procedures, obstacle clearance, and flare deployment.

Ordnance. 1 x MK-25/L and 1 x MK-58 flare minimum.

Prerequisites. IUT-500, IUT-502.

252. GRADUATE LEVEL COURSES

1. Crew Chief Night System SAR Instructor (CCNSSI)

a. The Crew Chief Night System SAR Instructor (CCNSSI) Course and training codes are listed in the MAWTS-1 Course Catalog. There will be no refly factors for these instructor flights.

b. A CCNSSI is a CC who has completed the NVG syllabus, certified by a CCNSI and designated by his squadron commanding officer. Designated CCNSSI's are qualified to instruct all NVG flights.

c. Previous qualifications represent a wealth of experience in NVG operations which may enhance the capabilities of a SAR unit. Crew Chiefs that have completed the SAR and NVG syllabi and meet the following criteria shall be eligible for the CCNSSI syllabus:

(1) SAR Crew Chief Instructor (CCI) designation.

(2) Twenty-five hours or more of NVG time.

(3) Ten hours or more of NVG time under low-light level conditions.

d. Crew Chiefs previously designated as CCNSI who are current in the CH-46E may be designated a CCNSSI following completion of the SAR and CCIUT syllabi.

e. Standardization shall be accomplished during MAWTS-1 certification flights and annual SAR evaluations.

253. SPECIAL FLIGHT PERFORMANCE REQUIREMENTS

1. Requirements, Qualifications, and Designations

a. Purpose. Ensure standardization of HH-46D crew chief in normal operations, emergency and SAR procedures.

b. General. RQD-600 is an annual OPNAVINST 3710.7 requirement. Once an aircrewman becomes SAR designated, RQD-602 becomes the annual requirement. RQD-640 is the CRM flight and may be flown in conjunction with the RQD-600 and RQD-602. RQD-603 is a Functional Check Flight code that is designed to indicate a crew chief has completed a locally generated FCF syllabus and is proficient in Functional Check Flight operations.

c. Crew Requirements

(1) CCI/CCUI if flights are flown during day.

(2) CCNSSI/CCUI if flights are flown at night.

d. Flight Training (3 flights, 6 hours)

RQD-600 1.5 E 1 ACFT (N)

Goal. NATOPS evaluation.

Requirements. Perform an evaluated flight per the HH-46D NATOPS Flight Manual.

Prerequisite. The NATOPS open book and closed book exams shall be completed prior to this flight.

Performance Standard. The performance expected by the evaluator in this flight shall be commensurate with the experience of the aircrew under evaluation.

RQD-602 3.0 E 1 ACFT (N)

Goal. SAR evaluation.

Requirements. The crew chief will demonstrate the ability to perform all tasks outlined in the NATOPS Flight Manual, with particular emphasis on the SAR mission. The check ride shall cover all aspects of the local SAR mission, NWP-3-50, and local SOP. A NATOPS instructor will evaluate.

Prerequisite. Prior to this flight the CCUI shall complete the Mission Capable, Mission Ready, and Mission Qualification stages of training. The NATOPS open book and closed book tests shall also be completed prior to this flight.

Performance Standard. The performance expected by the evaluator in this flight shall be commensurate with the experience of the aircrew under evaluation.

RQD-603 1.5 Hours Minimum 1 ACFT

Goal. Develop proficiency in Functional Check Flight (FCF) procedures and operations.

General. This flight does not require a CCI. However, the trainee shall perform the flight under the supervision and guidance of a FCF qualified crew chief. This flight will signify that a crew chief has completed a locally generated FCF syllabus and is proficient with FCF equipment, adjustments and operations.

Requirement. The CCUI will demonstrate knowledge and proficiency of FCF procedures, equipment installation and operation, adjustments to necessary components, and aircraft systems operating limitations.

Prerequisites. The CCUI shall complete a locally generated FCF syllabus.

Performance Standard. The performance expected by the evaluator in this flight shall be commensurate with the experience of the aircrew under evaluation.

RQD-640 1.5 E 1 ACFT (N)

Goal. Conduct a CRM evaluation.

Crew Requirement. CRMI or CRMF/CCUI.

Requirement. Crew chief will be evaluated on demonstration of knowledge and application of the principles of CRM.

Performance Standard. CCUI shall safely demonstrate CRM principles while executing a simulated mission scenario.

260. EXPENDABLE ORDNANCE REQUIREMENTS

ORDNANCE	100 SERIES	200 SERIES	300 SERIES	400 SERIES	ANNUAL*
Mk-25 Flares		1	6	1	9
Mk-58 Flares			6	1	14

* Annual ordnance requirements maintain an aircrew member at 85% MRP per T&R Program Manual.

AIRCRAFT: HH-46D (SAR) MOS: 6172 CREW POSITION: CREW CHIEF

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	SC	R	E	REMARKS
CORE SKILL INTRODUCTION TRAINING									
FAM	l08	1.5	*	2.0	X	X	X		1 ACFT
EP	l09	1.5	*	2.0	X		X		1 ACFT
CAL	120	1.5	*	2.0	X		X		1 ACFT
INT	130	1.5	*	2.0	X	X	X		1 ACFT
FF	140	1.5	*	2.0	X	X	X		1 ACFT
CORE SKILL BASIC TRAINING									
SAR	200	1.5	365	1.5	X	X	X		1 ACFT
	202	1.5	365	1.5	X	X	X		1 ACFT
	203	1.5	365	2.0	X	X	X		1 ACFT
	204	1.5	365	2.0	X	X	X		1 ACFT
	205	2.0	365	2.0	X	X	X		1 ACFT
	206	1.5	365	2.0	X	X	X		1 ACFT
	207	1.5	365	2.0	X	X	X		1 ACFT
	208	1.5	365	2.0	X	X	X		1 ACFT
	209	1.5	365	2.0	X	X	X		1 ACFT
CORE SKILL ADVANCED TRAINING									
NVG	300	1.5	365	1.5	X		X		1 ACFT N NS
	301	1.5	365	1.5	X		X		1 ACFT N NS
	302	1.5	365	1.5	X		X		1 ACFT N NS
	303	1.5	365	2.0	X	X	X		1 ACFT N NS
NSAR	321	1.5	365	1.5	X	X	X		1 ACFT N(NS)
	322	1.5	365	1.5	X	X	X		1 ACFT N(NS)
	323	2.0	365	2.0	X	X	X		1 ACFT N(NS)
	324	1.5	365	1.5	X	X	X		1 ACFT N(NS)
	325	1.5	365	1.5	X	X	X		1 ACFT N(NS)
	326	1.5	365	1.5	X	X	X		1 ACFT N(NS)
	327	1.5	365	2.0	X	X	X		1 ACFT N(NS)
	328	2.0	365	2.0	X	X	X	X	1 ACFT (N)(NS)
CORE PLUS TRAINING									
RAP	400	1.5	365	0.5					
	402	1.5	365	0.5	X	X	X		1 ACFT
FCLP	410	1.5	365	1.0	X		X		1 ACFT
	411	1.5	365	1.0	X		X		1 ACFT NS
CQ	420	1.5	365	1.0	X		X		1 ACFT
	421	1.5	365	1.0	X		X		1 ACFT NS

Figure 2-1.--Refly Interval, MRP.

AIRCRAFT: HH-46D (SAR) MOS: 6172 CREW POSITION: CREW CHIEF

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	SC	R	E	REMARKS
INSTRUCTOR UNDER TRAINING (IUT)									
FAM	500	1.5	*					X	1 ACFT (N)
FF	502	1.5	*					X	1 ACFT (N)
SAR	503	1.5	*					X	1 ACFT (N)
SPECIAL TRAINING									
RQD	600	3.0						X	1 ACFT (N)
	602	3.0	365					X	1 ACFT
	603	1.5						X	1 ACFT N
	640	1.5	365					X	1 ACFT (N)

Figure 2-1.--Refly Interval, MRP--Continued.

MOS 6172 FLIGHT UPDATE CHAIN

STAGE	FLIGHT	FLIGHT UPDATED
SAR	200	
	202	200
	203	202, 200
	204	203, 202, 200
	205	203, 202, 200
	206	202, 200
	207	206, 203, 202, 200
	208	206, 203, 202, 200
	209	207, 206, 203, 202, 200
NVG	300	200
	301	300
	302	301,300
	303	301, 300, 200
NSAR	321	202, 200
	322	321, 203, 202, 200
	323	322, 321, 303, 205, 203, 202, 200
	324	321, 303, 206, 202, 200
	325	324, 322, 321, 303, 207, 206, 203, 202, 200
	326	324, 322, 321, 303, 207, 206, 203, 202, 200
	327	325, 324, 322, 321, 303, 207, 206, 203, 202, 200
	328	205
RAP	400	203, 202, 200
	402	203, 202, 200
FCLP	410	
	411	410
CQ	420	410
	421	410, 411, 420
IUT	500	
	502	
	503	(May be used as Annual NATOPS check.)
RQD	600	
	602	
	603	
	640	(May be flown in conjunction with any other flight.)

Figure 2-2.--Crew Chief Flight Update Chaining.

SYLLABUS EVENT CONVERSION MATRIX

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	100 LEVEL		
FAM	100	FAM	108
	101	EP	109
	102		
INST	120	INST	
	121		
NFAM	130		
	131		

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	200 LEVEL		
CAL	200	CAL	120
	201		
MAL	210		
	211		
EXT	220	FF	140

Figure 2-3.--Syllabus Conversion Matrix.

SYLLABUS EVENT CONVERSION MATRIX

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	300 LEVEL		
NAV	300	SAR	200
	301		202
	302		
SAR	303		206
	304		203
	305		207
	306	RAP	402,400
	307	SAR	209
			204
			205
	320	NSAR	321
	321		
	322		324
	323		
	324		
	325		
	326		325
	327		327
	328		328
			322
			323
NVG	330	NVG	300

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	400 LEVEL		
NVG	400	NVG	301
	401		302
			303
FCLP	420	FCLP	410
	421		411
	422		
CQ	423	CQ	420
	424		421
	425		

Figure 2-3.--Syllabus Conversion Matrix--Continued.

SYLLABUS EVENT CONVERSION MATRIX

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	500 LEVEL		
FAM	500	FAM	500
INST	501		
EXT	502	FF	502
SAR	503	SAR	503

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	600 LEVEL		
RQD	600	RQD	600
	601		
	602		603
	603		
		CRM	640

Figure 2-3.--Syllabus Conversion Matrix--Continued.

CHAPTER 3

HH-46D SAR RESCUE AIRCREWMAN (SARRAC)

FIGURES

*** * N O T E * ***

Aircrews shall include Aircrew Coordination Techniques and/or Crew Resource Management as part of their brief.

CHAPTER 3

HH-46D SAR RESCUE AIRCREWMAN (SARRAC)

300. MARINE SEARCH AND RESCUE UNIT – HH-46D

1. General. The capabilities defined and described in the core capability and unit template sections are provided to ensure each like-SAR unit maintains a common base of training and depth of capabilities. When sources permit, and when, in the judgment of the commander, additional training would significantly increase the unit's Search and Rescue capability, training to a level above these base capabilities is permitted. It is incumbent upon and expected of commanders to balance any increase in the depth of core capabilities against the long-term health and readiness of their unit while staying within resource constraints.

2. Mission. The primary mission of Search and Rescue is to provide heliborne SAR capabilities to tenant aviation units. Additional missions are secondary in nature and shall be accepted on a not-to-interfere basis only.

3. Mission Essential Task List (METL)

a. Provide search and rescue for tenant aircraft.

b. Provide supplemental search and rescue asset for U. S. Coast Guard and U.S. Air Force missions.

c. Provide MEDEVAC capability to local civilian agencies as required, on a not-to-interfere basis.

d. Provide airborne fire-fighting capability for MCAS facilities and to supplement Forest Service assets in the local area.

e. Provide supplemental search and rescue to local civilian agencies for non-law enforcement type missions such as searches, fire fighting, disaster response, or civilian MEDEVAC, when civilian agencies cannot respond.

f. Provide utility and logistics support missions of MCAS activities as directed by the Director of Operations, MCABEAST.

g. Enhance public relations for the Commanding General, MCABEAST through static displays and flight demonstrations as authorized by higher authority.

4. Table of Organization

3 HH-46D helicopters
8 Pilots
9 Crew Chiefs
6 SAR Swimmers
4 SAR Corpsmen

5. Squadron Core Capability

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained search and rescue operations, assuming at least 100% Primary Authorized Allowance (PAA), 90% in reporting status, and 90% T/O on hand in all MOSs. If <90%, core capability will be degraded by like-percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to launch 1 full mission capable aircraft crewed by a fully qualified aircrew at all times. This aircraft must be airborne within 15 minutes of alert when operating under SAR Condition I and 1 hour under SAR Condition II.

301. PROGRAM OF INSTRUCTION (POI) FOR BASIC SARRAC

WEEKS	COURSE/PHASE	ACTIVITY
1-5	Naval Aircrew Candidate School	NAS Pensacola
6-10	Rescue Swimmer School	NAS Pensacola
12-13	Ground Training	VMR-1/MCAS Beaufort
14-25	Flight Training	VMR-1/MCAS Beaufort

302. POI FOR REFRESHER SARRAC

WEEKS	COURSE/PHASE	ACTIVITY
1-2	SAR Ground Training	VMR-1/MCAS Beaufort
3-12	SAR Flight Training	VMR-1/MCAS Beaufort

310. GROUND TRAINING COURSES OF INSTRUCTION

COURSE	ACTIVITY
Naval Aircrew Candidate School	NAS Pensacola
Rescue Swimmer School	NAS Pensacola
Helicopter Rappel Indoctrination Course	HMT-303 Camp Pendleton
Emergency Medical Technician Training	Naval Hospital

*Completion of the Rappel Indoctrination Course and Emergency Medical Technician Training is highly recommended but not required.

311. SQUADRON LEVEL TRAINING

NATOPS Flight Manual and NATOPS Pocket Checklist
Search and Rescue (SAR) Publications
Safety Publications
Squadron Standard Operating Procedures (SOPs)
Inspection, Utilization, and Limitations of Personal Aviation Survival Equipment
Inspection, Utilization, and Limitations of SAR Equipment
Inspection, Utilization, and Limitations of SAR Medical Equipment
Hand and Arm Signals
Search and Rescue Techniques
CPR Certification
Helicopter Rappel Training Manual (Student Guide)
Fire Bucket (Bambi Bucket) Operations Manual
Night Vision Device Ground Training
Ordnance Safety

320. FLIGHT TRAINING POI FOR BASIC SARRAC

1. SARRACs will be programmed to fly the complete program of instruction.

2. All syllabus flights shall be flown with a designated SARRAC NATOPS Instructor.

3. Core Skill Introduction Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-	50.0
Familiarization	1	1.5	1.5
Emergency Procedures	1	1.5	2.0
Confined Area Landings	1	1.5	1.5
Internal Loads	1	1.5	1.5
Internal Pax	1	1.5	1.5
Fire Fighting	1	1.5	2.0
	6	**9.0**	**60.0**

4. Core Skill Basic Training

STAGE	FLIGHTS	HOURS	PERCENT
Day Search and Rescue (SAR)	10	15.5	15.0
	10	**15.5**	**15.0**

5. Core Skill Advanced Training

STAGE	FLIGHTS	HOURS	PERCENT
Night Vision Goggle	4	6.0	6.0
Night SAR	8	13.0	14.0
	12	**19.0**	**20.0**

6. Core Plus Training

STAGE	FLIGHTS	HOURS	PERCENT
Helicopter Inland Rescue	4	6.0	4.0
Carrier Qualification	2	3.0	1.0
	6	**9.0**	**5.0**

7. Instructor Under Training	**4**	**7.5**
8. Special Training	**3**	**6.0**

321. FLIGHT TRAINING POI FOR REFRESHER SARRAC

1. Previously qualified SARRACs will be required to fly the appropriate Program of Instruction.

2. Consideration may be given to previous experience and qualifications. The POI shall be developed on an individual basis and include at a minimum the flights listed below. The CO may waive flights per the T&R Program Manual, MCO P3500.14_.

3. All flights shall be flown with a designated SARRAC NATOPS Instructor.

4. Core Skill Introduction Training

STAGE	FLIGHTS	HOURS
Basic Qualification	-	-
Emergency Procedures	1	1.5
Internal Loads	1	1.5
Internal Pax	1	1.5
Fire Fighting	1	1.5
	4	**6.0**

5. Core Skill Basic Training

STAGE	FLIGHTS	HOURS
Day Search and Rescue (SAR)	7	11.0
	7	**11.0**

6. Core Skill Advanced Training

STAGE	FLIGHTS	HOURS
Night Vision Goggle	2	3.0
Night SAR	5	8.0
	7	**11.0**

7. Core Plus Training

STAGE	FLIGHTS	HOURS
Helicopter Inland Rescue	2	3.0
Carrier Qualification	2	3.0
	6	**6.0**

8. Instructor Under Training	**4**	**7.5**
9. Special Training	**3**	**6.0**

330. SIMULATOR TRAINING. Not applicable.

340. FLIGHT PERFORMANCE REQUIREMENTS

1. Purpose. Promote standardization of SARRAC procedures and to establish a minimum training program for those personnel assigned as a SARRAC aboard the HH-46D.

2. General

a. Personnel shall complete the Naval Aircrew Candidate School and Rescue Swimmer School prior to commencement of flight training.

b. Personnel should complete Helicopter Rappel Indoctrination Course as soon as possible. Personnel are required to complete Helicopter Rappel Indoctrination Course prior to commencement of Helicopter Inland Rescue Aircrewmen (HIRA) training.

c. All flights shall terminate with a comprehensive debrief with emphasis on the aircrew's performance using all evaluation techniques.

d. Aircrews should fly events annotated with an N at least 30 minutes after official sunset. Pilots may fly events annotated with (N) at night.

e. Aircrews shall fly events annotated with an NVG with Night Vision Goggles for the entire flight. Aircrews may fly events with (NVG) with the option of using NVGs.

3. Refly Interval. Figure 3-1 shows refly interval and Mission Readiness Percentage (MRP) for SARRACs.

4. Aircrew Evaluation Flights. All flights annotated with an E are required to have one of the following:

a. NATOPS evaluation form filled out annually upon completion of the NATOPS Check (RQD-600).

b. OPNAVINST 3130.6 evaluation form filled out annually upon completion of the SARRAC/HIRA Check (RDQ-601).

c. Any flight in the Core Skill Advanced, Core Skill Basic, or Core Plus phase as recommended by the Squadron Standardization Board.

5. Aircrew Coordination/Crew Resource Management. Aircrews shall include Crew Resource Management (CRM) as part of their mission brief.

341. CORE SKILL INTRODUCTION TRAINING

1. Familiarization

a. Purpose. Familiarize the SARRACUI with HH-46D operations and procedures.

b. General. These flights may be flown on any appropriate flight of the pilot syllabus.

c. Crew Requirements. SARRACI/SARRACUI.

d. Flight Training (2 Flights, 3.0 Hours)

FAM-108 1.5 1 ACFT

Goal. Introduce HH-46D characteristics, SARRAC responsibilities, discuss crew coordination, and conduct area familiarization.

Requirement

(1) Brief/Discuss

(a) HH-46D nomenclature.

(b) Preflight/Postflight procedures.

(c) Equipment inventory and inspection.

(d) Look-out doctrine.

(2) Introduce/Demonstrate

(a) Preflight/Postflight procedures.

(b) Equipment inventory and inspection.

(c) Look-out techniques and procedures.

Performance Standard. SARRACUI shall be able to perform familiarization maneuvers per NATOPS manual.

EP-109 1.5 R 1 ACFT

Goal. Conduct HH-46D familiarization and introduce emergency procedures.

Requirement

(1) Brief/Discuss

(a) HH-46D nomenclature.

(b) Preflight/Postflight procedures.

(c) Equipment inventory and inspection.

(d) Ground and In-flight emergencies.

(e) Ditching and Egress procedures.

(2) Introduce/Demonstrate

(a) Preflight/Postflight procedures to include Equipment inventory and inspection.

(b) Ground and In-flight emergencies.

(c) Ditching and Egress procedures.

Performance Standard. SARRACUI shall demonstrate knowledge of aircraft systems, perform basic FAM maneuvers, and be able to satisfactorily perform emergency procedures per NATOPS manual.

Prerequisite. FAM-108.

2. Confined Area Landings (CAL)

a. Purpose. Instruct the SARRACUI in his duties when landing in confined areas.

b. General. These flights may be flown on any flight of the pilot CAL stage.

c. Crew Requirements. SARRACI/SARRACUI.

d. Flight Training (1 Flights, 1.5 Hours)

CAL-l20 1.5 1 ACFT

Goal. Introduce CALs and lookout doctrine.

Requirement

(1) Brief/Discuss

(a) HH-46D nomenclature to include specific blade clearance lengths and measurements.

(b) CAL zone evaluation.

(c) Crew Coordination and responsibilities to include obstacle avoidance in the CAL.

(d) Standard voice communications and Lost ICS procedures

(e) Emergency procedures and departure routes.

(2) Introduce/Demonstrate

(a) HH-46D nomenclature to include specific blade clearance lengths and measurements.

(b) CAL zone selection and evaluation.

(c) Crew Coordination and responsibilities.

(d) Standard voice communications and lost ICS procedures.

(e) Emergency procedures and departure routes.

(f) Conduct at least 5 CALs with 3 being performed with the SARRACUI acting as the crew chief.

Prerequisite. FAM-109.

Performance Standard. SARRACUI will demonstrate the ability to successfully crew the aircraft to the deck for a minimum of 5 landings.

3. Internal Loads

a. Purpose. Introduce the SARRACUI to patient, cargo and passenger loading and unloading procedures.

b. General. These flights may be flown on any appropriate flight of the pilot syllabus.

c. Crew Requirements. SARRACI/SARRACUI.

d. Flight Training (2 Flights, 3.0 Hours)

INT-130 1.5 R 1 ACFT

Goal. Review procedures for cargo loading and unloading.

Requirement

(1) Brief/Discuss

(a) Cargo loading/unloading procedures.

(b) Tie-down and securing cargo.

(2) Introduce/Demonstrate

(a) Cargo loading/unloading procedures.

(b) Tie-down and securing cargo.

Performance Standard. SARRACUI will demonstrate the ability to safely embark and debark passengers and cargo. SARRACUI will demonstrate the ability to safely refuel and manage in-flight responsibilities for the internal fuel tank.

INT-131 1.5 R 1 ACFT

Goal. Review procedures for patient loading, passenger briefing and safety procedures.

Requirement

(1) Brief/Discuss

(a) Passenger manifesting and safety briefing.

(b) Patient loading.

(2) Introduce/Demonstrate

(a) Passenger manifesting and safety briefing.

(b) Patient loading.

Prerequisite. INT-130.

Performance Standard. SARRACUI will demonstrate the ability to safely embark and debark litter patients.

4. Fire Fighting

a. Purpose. Develop the ability to conduct water bucket operations.

b. General. These flights may be flown with water bucket flights in the pilot syllabus.

c. Crew Requirements. SARRACI/SARRACUI.

d. Flight Training (1 Flight, 1.5 Hours)

FF-140 1.5 R 1 ACFT

Goal. Review procedures for water bucket (Bambi Bucket) operations.

Requirement

(1) Brief/Discuss

(a) Water bucket operations.

(b) Preflight/postflight procedures and limitations for external cargo hook and water bucket.

(c) Communication procedures to include standard terminology and hand and arm signals for lost ICS procedures.

(d) Emergency procedures to include lost ICS and Emergency cut-away (Pickle).

(2) Introduce/Demonstrate

(a) Preflight procedures and limitations for external cargo hook and water bucket.

(b) Equipment hook up and staging procedures.

(c) Communication procedures to include standard terminology and hand and arms signals for lost ICS procedures.

(d) Emergency procedures to include lost ICS and Emergency cut-away (Pickle).

(e) Postflight procedures and Bambi Bucket maintenance.

Prerequisite. INT-130.

Performance Standard. SARRACUI shall be able to safely fill Bambi Bucket, complete minimum of 5 hookups and water drops, and deliver water to fire within 5 meters of intended point of impact.

342. CORE SKILL BASIC TRAINING

1. Day Search and Rescue

a. Purpose. Familiarize the SARRACUI with the SAR mission and operations, aircraft limitations and emergency procedures. To develop proficiency in loading cargo/passengers, in-flight procedures, SAR procedures, requirements, and knowledge of safety regulations.

b. General. The T&R Program Manual addresses the commanding officer's authority to modify this training as required. Personnel will complete the appropriate ground schools prior to beginning the flight-training syllabus. A NATOPS instructor will monitor the SARRACUI's progress during the flight-training syllabus.

c. Crew Requirements. SARRACI/SARRACUI.

2. Navigation/Medical Evacuation (MEDEVAC)

a. Purpose

(1) Familiarize the SARRACUI with general navigational techniques while operating in the surrounding areas and area hospitals landing areas.

(2) Practice procedures for Medical Evacuation and providing continued care while enroute to a Medical Treatment Facility.

b. General. The T&R Program Manual addresses the commanding officer's authority to modify this training as required. Personnel will complete the appropriate ground schools prior to beginning the flight training syllabus. A SARRAC NATOPS instructor will monitor the SARRACUIs progress during the flight-training syllabus.

c. Prerequisite. The following flights of the HH-46D SARRAC syllabus shall be satisfactorily completed prior to commencing the Core Skill Introduction training phase: FAM-l08, EP-109, CAL-120, INT-130 and 131, and FF-140.

d. Crew Requirements. SARRACI/SARRACUI.

e. Flight Training (6 Flights, 9.0 Hours)

SAR-200 1.5 1 ACFT

Goal. Introduce navigation procedures and local area hospital landing zones.

Requirement

(1) Brief/Discuss

(a) Navigation procedures to include use of Global Positioning System (GPS) and aeronautical charts.

(b) Area hospitals and their medical capabilities/locations.

(c) Cabin preparation and rigging of the litters.

(d) Use of radios in relaying patient information to the destination medical facility and use of the aircraft utility electrical power supply.

(2) Introduce/Demonstrate

(a) Identify local area hospital Landing Zones.

(b) Use of aircraft electrical system and radio to contact receiving medical facility.

Performance Standard. SARRACUI shall safely prepare the cabin for litter carriage using the stanchions, and should demonstrate the ability to utilize the radio and/or the ICS to relay patient information to the pilots or emergency department.

Ordnance. None.

External Syllabus Support. Clearance from area hospitals for landing at pads.

NAV-201 2.0 1 ACFT

Goal. Introduce navigation procedures, distant area hospital landing zones, and procedures for medical evacuation.

Requirement

(1) Brief/Discuss

(a) Navigation procedures.

(b) Area hospitals and their medical capabilities/locations.

(c) Local medical protocols and flight surgeon recall procedures for hospital-to-hospital transfers.

(d) Cabin preparation and rigging of the litters.

(e) Use of radios in relaying patient information to the destination medical facility and use of the aircraft utility electrical power supply.

(2) Introduce/Demonstrate

(a) Identify hospital Landing Zones.

(b) Prepare the cabin to accept patients.

(c) Assist SARMT with receiving the report from onscene providers, performing assessments and packaging patient for transport.

(d) Assist SARMT in an actual/simulated medical evacuation to an airport/hospital facility while providing inflight care/monitoring.

(e) Use aircraft electrical system and radio to contact receiving facility.

Prerequisite. NAV-200.

Performance Standard. SARRACUI shall safely prepare the cabin for litter carriage using the stanchions, and assist the SMT with enroute treatment of patients.

Ordnance. None

External Syllabus Support. Local EMS or hospital if desired.

SAR-202 1.5 1 ACFT

Goal. Conduct day overland approach patterns and CALs.

Requirement

(1) Brief/Discuss

(a) Standard approach parameters and search patterns.

(b) CAL procedures.

(c) Standard ICS voice communications.

(d) Remote hover coupler station.

(e) Emergency “Wave-Off” conditions and procedures.

(2) Introduce/Demonstrate

(a) Normal approach patterns and standard ICS terminology.

(b) Perform a minimum of 3 CALS. 1 should be conducted while acting in the capacity of the Crewchief.

(c) Practice positioning the aircraft over a simulated survivor utilizing standard ICS terminology.

(d) Use remote hover coupler station for familiarization.

(e) Practice positioning the aircraft over a simulated survivor utilizing the remote hover station and standard ICS terminology.

Prerequisite. NAV-201.

Performance Standard. SARRACUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point.

Ordnance. None.

External Syllabus Support. None.

SAR-203 1.5 R 1 ACFT

Goal. Conduct day overland hoisting operations.

Requirement

(1) Brief/Discuss

(a) Hoist capability and limitations.

(b) Emergency procedures and troubleshooting techniques for hoist failure.

(c) Use of quick splice and Chicago grip.

(d) Review hand and arm signals and Aldis lamp signals.

(e) Rescue equipment functions, capacities, and limitations.

(f) Rigging of rescue equipment for hoisting evolutions.

(2) Introduce/Demonstrate

(a) Rigging of rescue strop, force penetrator/rescue seat, rescue litter, MEDEVAC litter, and rescue net.

(b) Perform a minimum of 2 hoisting evolutions, one with the rescue strop and one with the rescue net while acting as hoist operator.

(c) Demonstrate use of quick splice and Chicago grip.

(d) Perform a minimum of 2 hoisting evolutions with the Rescue litter and/or MEDEVAC litter while on the ground acting as the SARRAC.

Prerequisite. SAR-202.

Performance Standard. SARRAC shall rig and perform 2 hoisting evolutions as the hoist operator using the rescue strop and rescue net, and 2 hoisting evolutions from the ground as SARRAC using the Stokes litter and MEDEVAC litter.

Ordnance. None.

External Syllabus Support. None.

SAR-204 1.5 R 1 ACFT

Goal. Conduct day hoist operations with rescue devices utilizing the internal winch through the cabin floor rescue hatch and aft cargo hatch.

Requirement

(1) Brief/Discuss

(a) Internal winch capabilities and limitations.

(b) Setup of rigging and use of winch control station and remote handgrip.

(c) Emergency procedures and troubleshooting technique for winch failure.

(d) Review standard ICS voice communications and hand and arm signals.

(e) Review rigging of rescue equipment for hoisting evolutions.

(2) Introduce/Demonstrate

(a) Setup of rigging and remote handgrip.

(b) Complete a minimum of 2 hoisting evolutions with the rescue net and rescue litter while functioning as the winch operator.

(c) Complete a minimum of 2 hoisting evolutions with the rescue seat and rescue/MEDEVAC litter while on the ground acting as the SARRAC.

Prerequisite. SAR-203.

Performance Standard. SARRACUI shall rig the remote handgrip and safely conduct 1 hoist as hoist operator and 3 hoists from the ground as SARRAC using the rescue net, Stokes litter, rescue seat, and MEDEVAC litter utilizing the internal winch and conducting the hoisting operations through the hellhole and over the ramp.

Ordnance. None

External Syllabus Support. None.

SAR-205 2.0 R 1 ACFT

Goal. Conduct day overland SAR exercise.

Requirement

(1) Brief/Discuss

(a) Overland SAR procedures, to include search patterns and CAL selection.

(b) Crewmember responsibilities and cabin preparation.

(c) Communication procedures.

(2) Introduce/Demonstrate

(a) Cabin preparation and actions while in route to scene.

(b) Assist SARMT in patient(s) assessment, treatment and packaging.

(c) Loading and securing patient(s) inside aircraft.

(d) Assist SARMT in providing care while enroute to Medical Treatment Facility.

(e) Unloading and transferring patient(s).

Prerequisite. SAR-203, NAV-201.

Performance Standard. SARRACUI shall rig the remote handgrip and safely conduct hoists as hoist operator and from the ground as SARRAC using the rescue net, Stokes litter, rescue seat, and MEDEVAC litter.

Ordnance. None.

External Syllabus Support. Local EMS/Fire Rescue if available.

SAR-206 1.5 R 1 ACFT

Goal. Conduct day maritime SAR approach training.

Requirement

(1) Brief/Discuss

(a) Doppler/Coupler capabilities and procedures to include standard terminology and remote hover station.

(b) Crewmember responsibility during approach procedures.

(c) Flare capabilities, arming/disarming, and deployment techniques.

(d) Ordnance hazards and safety precautions.

(2) Introduce/Demonstrate

(a) Flare deployment.

(b) Voice communication using standard terminology.

(c) Verbal control of aircraft movements during a manual approach. SARRACUI will complete a minimum of 2 manual approach evolutions.

(d) Operation of the remote hover station during a coupled approach. SARRACUI will complete a minimum of 2 coupled approach evolutions.

Prerequisite. SAR-202.

Performance Standard. SARRACUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The SARRACUI will safely conduct simulated hoisting operations utilizing the Rescue Strop, Rescue Litter, MEDEVAC Litter, and Rescue Net. SARRACUI will maintain a hover utilizing the crew chiefs Remote Hover Coupler Station, and maintain within 2 meters of hover point.

Ordnance. 1 Mk-25 Flare, 1 Mk-58 Flare.

External Syllabus Support. None.

SAR-207 1.5 R 1 ACFT

Goal. Conduct day Rescue Swimmer deployments and recoveries. Introduce hoist recoveries utilizing the rescue strop and rescue net. Introduce swimmer transport via the short haul.

Requirements

(1) Brief/Discuss

(a) Impact of sea state and weather concerning swimmer deployments.

(b) Swimmer deployments and recovery procedures.

(c) Survivor assessment, disentanglement, and recovery procedures.

(d) Short haul purpose and procedures.

(e) Normal and emergency hoisting procedures.

(f) ICS communications and standard hand and arm signals.

(g) Ordnance hazards and safety precautions.

(2) Introduce/Demonstrate

(a) 3 day jump deployments and recoveries.

(b) Day jump deployment and dual hoist recovery utilizing the rescue strop with a simulated survivor.

(c) Day jump deployment and dual hoist recovery utilizing the rescue net with a simulated survivor.

(d) Perform short haul to simulated survivor.

Prerequisites. SAR-206.

Performance Standard. SARRAC shall safely conduct 3 day jumps from 10/10 or 15/0 and recover via rescue strop and rescue net. SARRAC shall safely perform a short haul on 1 of the recoveries.

Ordnance. 1 Mk-58 Flare.

External Syllabus Support. Safety boat/aircraft with safety swimmer. Survivors as required.

SAR-208 1.5 R 1 ACFT

Goal. Conduct day Rescue Swimmer deployments and recoveries. Introduce recoveries with the rescue and MEDEVAC litters.

Requirements

(1) Brief/Discuss

(a) Impact of sea state and weather concerning swimmer deployments.

(b) Swimmer deployments and recoveries.

(c) Survivor assessment, disentanglement, and recovery procedures.

(d) The use of the trail line assembly.

(e) Normal and emergency hoisting procedures.

(f) ICS communications and hand and arm signals.

(g) Ordnance hazards and safety precautions.

(2) Introduce/Demonstrate

(a) Perform a minimum of 2 day jump deployments and recoveries.

(b) Perform a minimum of 1 MEDEVAC litter deployment and recovery with a simulated survivor.

(c) Perform a minimum of 1 Rescue (Stokes) litter deployment and recovery with a simulated survivor.

Prerequisites. SAR-207.

Performance Standard. SARRAC shall safely conduct 2 day jumps from 10/10 or 15/0 and recover simulated survivor with Stokes litter and rescue litter.

Ordnance. 1 Mk-58 Flare.

External Syllabus Support. Safety boat/aircraft with safety swimmer. Survivors as required.

SAR-209 1.5 R 1 ACFT

Goal. Conduct Day SAR hoist training to a boat or ship. Practice hoist deployment and recovery of the SARRAC, SARMT and SAR Equipment.

Requirement

(1) Brief/Discuss

(a) Normal and emergency procedures to include standard ICS terminology and hand and arm signals.

(b) Aircraft approach procedures and positioning.

(c) Special considerations when operating around a boat or ship to include the effects of sea state and obstacles.

(d) SARRAC/SMT and equipment hook-up procedures.

(2) Demonstrate

(a) Deployment and recovery of SARRAC/SARMT to the boat or ship.

(b) Hoisting procedures utilizing the rescue/MEDEVAC litter, rescue net, and rescue strop.

(c) Conduct a minimum of 2 rescue/MEDEVAC litter deployment and recoveries utilizing the trail line as SARRAC on deck.

(d) Conduct a minimum of 1 recovery utilizing the rescue strop.

Prerequisites. SAR-203, SAR-206.

Performance Standard. SARRAC shall conduct deployment from a hover to the deck of a boat or ship and conduct 2 deployment and recoveries of simulated survivor using Stokes and MEDEVAC litters and trail line, and 1 recovery via rescue strop.

Ordnance. 1 Mk-25 flare.

External Syllabus Support. Safety boat with safety swimmer that is suitable for hoisting from (i.e. US Coast Guard or affiliate, US military vessels, local municipal rescue/FD water rescue units, etc.) Survivors as required.

343. CORE SKILL ADVANCED TRAINING

1. Night Vision Goggles

a. Purpose. Develop proficiency required to safely conduct basic operations, navigation, and search and rescue patterns utilizing NVGs.

b. Prerequisite. Completion of NVG Night Lab.

c. Crew Requirements. CCNSSI/SARRACUI.

d. Flight Training (4 Flights, 6.0 Hours)

NVG-300	1.5	R	1 ACFT	N/NS

Goal. Introduce NVG low work and touch and go landings under ambient light conditions of .0022 LUX or greater.

Requirement

(1) Brief/Discuss

(a) Use and limitations of NVGs.

(b) NVG tube/battery failures and emergency procedures.

(c) Lookout doctrine and obstacle clearances.

(2) Introduce/Demonstrate. Wearing and use of NVGs.

Prerequisite. None.

Performance Standard. SARRACUI shall be able to safely perform familiarization maneuvers while on NVGs per NFM, and MAWTS-1 NVG Manual.

Ordnance. None.

External Syllabus Support. None.

NVG-301 1.5 1 ACFT N/NS

Goal. Develop proficiency in conducting night land SAR operations while using NVGs.

Requirement

(1) Brief/Discuss

(a) Use and limitations of NVGs to include emergency procedures.

(b) CALs.

(2) Introduce/Demonstrate. Wearing and use of NVGs while conducting a minimum of 3 CALs.

Prerequisite. NVG-300.

Performance Standard. SARRACUI shall be able to safely perform SAR operations while on NVGs per NFM, and MAWTS-1 NVG Manual.

Ordnance. None.

External Syllabus Support. None.

NVG-302 1.5 R 1 ACFT N/NS

Goal. Develop proficiency with NVGs during night overwater SAR operations.

Requirement

(1) Brief/Discuss

(a) Use and limitations of NVGs to include emergency procedures.

(b) Search patterns and aircraft lighting.

(c) Flare usage and deployment.

(d) Approach procedures.

(2) Introduce/Demonstrate. Wearing and use of NVGs while conducting a minimum of 2 approaches, 1 manual and 1 coupled.

Prerequisite. NVG-301.

Performance Standard. SARRACUI shall be able to safely perform overwater SAR operations while on NVGs per NFM, and MAWTS-1 NVG Manual.

Ordnance. 1 MK-25 flare, 1 MK-58 flare.

External Syllabus Support. None.

NVG-303 1.5 1 ACFT N/NS

Goal. Fly extended navigation and search patterns. Develop proficiency with NVGs during night SAR operations.

Requirement

(1) Brief/Discuss

(a) Use and limitations of NVGs to include emergency procedures.

(b) Search patterns and aircraft lighting.

(c) Flare usage and deployment.

(d) Approach procedures.

(2) Introduce/Demonstrate. Wearing and use of NVGs while conducting navigation and search patterns.

Prerequisite. NVG-302.

Performance Standard. SARRACUI shall demonstrate ability to assist pilots and crewchief in search pattern, maintain good search doctrine, ensure effective CRM for navigation and obstacle clearance, and utilize proper terminology.

Ordnance. 1 MK-25, 1 MK-58.

External Syllabus Support. None.

2. Night Search and Rescue

a. Purpose. Familiarize the SARRACUI with the SAR mission and operations, aircraft lighting systems and emergency procedures at night. To develop proficiency in loading cargo/passengers, in-flight procedures, SAR procedures and requirements, and knowledge of safety regulations.

b. General. The T&R Program Manual addresses the commanding officer's authority to modify this training as required. Personnel will complete the

appropriate ground schools prior to beginning the flight-training syllabus. A SARRAC NATOPS instructor will monitor the SARRACUI's progress during the flight-training syllabus.

c. Prerequisite. The following sections or flights of the HH-46D SARRAC syllabus shall be satisfactorily completed prior to commencing the Night SAR qualification training phase (17 Flights, 27.0 Hours):

(1) Core Skill Introduction Training (6 flights, 9 hours).

(2) Core Skill Basic Training (10 flights, 15.5 hours).

d. Crew Requirements. SARRACI/SARRACUI.

e. Flight Training (8 Flights, 13.0 Hours)

NSAR-321 1.5 1 ACFT N/(NS)

Goal. Conduct night overland approach patterns and CALs).

Requirement

(1) Brief/Discuss

(a) Aircraft Lighting Systems.

(b) Standard approach parameters and search patterns.

(c) CAL procedures.

(d) Standard ICS voice communications.

(e) Remote hover coupler station.

(f) Emergency “Wave-Off” conditions and procedures.

(2) Introduce/Demonstrate

(a) Normal approach patterns and standard ICS terminology.

(b) Perform a minimum of 3 CALS. One should be conducted while acting in the capacity of the crew chief.

(c) Practice positioning the aircraft over a simulated survivor utilizing standard ICS terminology.

(d) Use remote hover coupler station for familiarization.

(e) Practice positioning the aircraft over a simulated survivor utilizing the remote hover station and standard ICS terminology.

Prerequisite. SAR-202.

Performance Standard. SARRACUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point.

Ordnance. None.

External Syllabus Support. None.

NSAR-322 1.5 R 1 ACFT N/(NS)

Goal. Conduct night overland hoisting operations.

Requirement

(1) Brief/Discuss

(a) Hoist capability and limitations.

(b) Emergency procedures and troubleshooting techniques for hoist failure.

(c) Review hand and arm signals and Aldis lamp signals.

(d) Rigging and chemlite placement for rescue equipment for hoisting evolutions.

(2) Introduce/Demonstrate

(a) Rigging of chemlites on the rescue strop, force penetrator/rescue seat, rescue litter, MEDEVAC litter, and rescue net.

(b) Perform a minimum of 2 hoisting evolutions, 1 with the rescue strop and 1 with the rescue net while acting as hoist operator.

(c) Perform a minimum of 2 hoisting evolutions with the Rescue litter and/or MEDEVAC litter while on the ground acting as the SARRAC.

Prerequisite. NSAR-321, SAR-203.

Performance Standard. SARRAC shall rig and perform 2 hoisting evolutions as the hoist operator using the rescue strop and rescue net, and 2 hoisting evolutions from the ground as SARRAC using the Stokes litter and MEDEVAC litter.

Ordnance. None.

External Syllabus Support. None.

NSAR-323 2.0 1 ACFT N/(NS)

Goal. Conduct night overland SAR exercise.

Requirement

(1) Brief/Discuss

(a) Overland SAR procedures, to include search patterns and CAL selection.

(b) Crewmember responsibilities and cabin preparation.

(c) Communication procedures.

(2) Introduce/Demonstrate

(a) Cabin preparation and actions while in route to scene.

(b) Assist SMT in patient(s) assessment, treatment and packaging.

(c) Loading and securing patient(s) inside aircraft.

(d) Assist SMT in providing care while enroute to Medical Treatment Facility.

(e) Unloading and transferring patient(s).

Prerequisite. NSAR-322, SAR-205.

Performance Standard. SARRACUI shall rig the remote handgrip and safely conduct hoists as hoist operator and from the ground as SARRAC using the rescue net, Stokes litter, rescue seat, and MEDEVAC litter.

Ordnance. None.

External Syllabus Support. Local EMS/Fire Rescue if available.

NSAR-324 1.5 1 ACFT N/(NS)

Goal. Conduct night maritime SAR approach training.

Requirement

(1) Brief/Discuss

(a) Doppler/Coupler capabilities and procedures to include standard terminology and remote hover station.

(b) Crewmember responsibility during approach procedures.

(c) Flare capabilities, arming/disarming, and deployment techniques.

(d) Ordnance hazards and safety precautions.

(2) Introduce/Demonstrate

(a) Flare deployment.

(b) Voice communication using standard terminology.

(c) Verbal control of aircraft movements during a manual approach. SARRACUI will complete a minimum of 2 manual approach evolutions.

(d) Operation of the remote hover station during a coupled approach. SARRACUI will complete a minimum of 2 coupled approach evolutions.

Prerequisite. NSAR-321, SAR-206.

Performance Standard. SARRACUI shall provide calls to the pilot to conduct a hover for crewmember deployment, maintaining within 2 meters of hover point. The SARRACUI will safely conduct simulated hoisting operations utilizing the Rescue Strop, Rescue Litter, MEDEVAC Litter, and Rescue Net. SARRACUI will maintain a hover utilizing the crew chief's Remote Hover Coupler Station, and maintain within 2 meters of hover point.

Ordnance. 1 Mk-25, 1 Mk-58 Flare.

External Syllabus Support. None.

NSAR-325 1.5 R 1 ACFT N/(NS)

Goal. Conduct night Rescue Swimmer deployments and recoveries. Introduce hoist recoveries utilizing the rescue strop and rescue net.

Requirements

(1) Brief/Discuss

(a) Impact of sea state and weather concerning swimmer deployments.

(b) Swimmer deployments and recoveries procedures.

(c) Survivor assessment, disentanglement, and recovery procedures.

(d) Normal and emergency hoisting procedures.

(e) ICS communications and standard hand and arm signals.

(f) Ordnance hazards and safety precautions.

(2) Introduce/Demonstrate

(a) Night deployment (via hoist) and recovery of the swimmer a minimum of 2 times.

(b) Night deployment (via hoist) and dual hoist recovery utilizing the rescue strop with a simulated survivor.

(c) Night deployment (via hoist) and dual hoist recovery utilizing the rescue net with a simulated survivor.

Prerequisites. NSAR-324, SAR-207.

Performance Standard. SARRAC shall safely conduct 2 night deployments from 50 foot hover via hoist and recover via rescue strop and rescue net.

Ordnance. 1 Mk-58 Flare.

External Syllabus Support. Safety boat/aircraft with safety swimmer. Survivors as required.

NSAR-326 1.5 R 1 ACFT N/(NS)

Goal. Conduct night Rescue Swimmer deployments and recoveries. Introduce recoveries utilizing the Stokes and MEDEVAC litters.

Requirements

(1) Brief/Discuss

(a) Impact of sea state and weather concerning swimmer deployments.

(b) Swimmer deployments and recoveries.

(c) Survivor assessment, disentanglement, and recovery procedures.

(d) The use of the trail line assembly.

(e) Normal and emergency hoisting procedures.

(f) ICS communications and hand and arm signals.

(g) Ordnance hazards and safety precautions.

(2) Introduce/Demonstrate

(a) Perform a minimum of 2 night deployments (via hoist) and recoveries.

(b) Perform a minimum of 1 MEDEVAC litter deployment and recovery with a simulated survivor.

(c) Perform a minimum of 1 Rescue (Stokes) litter deployment and recovery with a simulated survivor.

Prerequisites. NSAR-325, SAR-208.

Performance Standard. SARRAC shall safely conduct 2 night deployments from 50 foot hover and recover simulated survivor with Stokes litter and rescue litter.

Ordnance. 1 Mk-58 Flare.

External Syllabus Support. Safety boat/aircraft with safety swimmer. Survivors as required.

NSAR-327 1.5 R 1 ACFT N/(NS)

Goal. Conduct night SAR hoist training to a boat or ship. Introduce hoist deployment and recovery of the SARRAC, SMT, and SAR Equipment.

Requirement

(1) Brief/Discuss

(a) Normal and emergency procedures to include standard ICS terminology and hand and arm signals.

(b) Aircraft approach procedures and positioning.

(c) Special considerations when operating around a boat or ship to include the effects of sea state and obstacles.

(d) SARRAC/SMT and equipment hook-up procedures.

(2) Introduce/Demonstrate

(a) Deployment and recovery of SARRAC/SMT to the boat or ship.

(b) Hoisting procedures utilizing the rescue/MEDEVAC litter, rescue net, and rescue strop.

(c) Conduct a minimum of 2 rescue/MEDEVAC litter deployment and recoveries utilizing the trail line as SARRAC on deck.

(d) Conduct a minimum of 1 recovery utilizing the rescue strop.

Prerequisites. NSAR-322, NSAR-324, SAR-209.

Performance Standard. SARRAC shall conduct deployment from a hover to the deck of a boat or ship and conduct 2 deployment and recoveries of simulated survivor using Stokes and MEDEVAC litters and trail line, and one recovery via rescue strop.

Ordnance. 1 Mk-25 flare.

External Syllabus Support. Safety boat with safety swimmer that is suitable for hoisting from (i.e. US Coast Guard or affiliate, US military vessels, local municipal rescue/FD water rescue units, etc.) Survivors as required.

NSAR-328 2.0 R 1 ACFT N/(NS)

Goal. Participate in a SAR Exercise (SAREX)

Requirement

(1) Brief/Discuss

(a) Overland/overwater SAR procedures.

(b) Search Patterns.

(c) Night/low visibility procedures.

(d) Medical treatment procedures/protocols.

(e) Transportation protocols.

(f) Ordnance hazards and safety precautions.

(2) Introduce/Demonstrate

(a) Rescue techniques and assisting SMT in medical treatment of injured patients.

(b) Conduct the rescue and assist in the treatment of a minimum of 2 patients from either land or water in either day or night conditions.

Prerequisites. NSAR-321 through NSAR-327, SAR-205.

Performance Standard. SARRACUI shall rig the remote handgrip and safely conduct hoists as hoist operator and from the ground or water as SARRAC using the rescue net, Stokes litter, rescue seat, and MEDEVAC litter.

Ordnance. 1 MK-25, 1 MK-58.

External Syllabus Support. Local EMS/Fire Rescue if required. Safety boat with safety swimmer that is suitable for hoisting from (i.e. US Coast Guard or affiliate, US military vessels, local municipal rescue/FD water rescue units, etc.) Survivors as required.

344. CORE PLUS TRAINING

1. Helicopter Inland Rescue Aircrewman (HIRA) Rappel Operations

a. Purpose. Develop the SARRACs knowledge and proficiency of rappel procedures, equipment limitations, equipment set-up and usage, and safety checks.

b. General

(1) SARRAC must have completed Helicopter Rappel Training Ground School (HMT-303) as required by OPNAVINST 3130.6 (series).

(2) Prior to beginning flight training, SARRAC shall complete a local rappel ground-training syllabus and meet all requirements as indicated in applicable SAR related publications.

(3) All rappel-training evolutions shall be conducted with the use of the belay line for “Bagless” rappels or a HIRA qualified safety observer tending the free end of the rappel rope during a “Standard” rappel.

(4) Only HIRA qualified personnel shall act as a survivor for all training short haul evolutions.

(5) Rappel and hoisting operations should not be conducted while using NVGs.

(6) Upon completion of this stage of training, SARRAC should be able to correctly perform all required equipment set-ups and safely rappel from the helicopter.

c. Crew Requirements. HIRAI/HIRAUT.

d. Flight Training (4 flights, 6 hours)

RAP-400 1.5 1 ACFT

Goal. Introduce SAR rappelling operations.

Requirement

(1) Brief/Discuss

(a) Safety considerations.

(b) Crew coordination and communication during rappel operations to include standard ICS terminology and hand and arm signals.

(c) Equipment inventory, preflight inspection and set-up.

(2) Introduce/Demonstrate

(a) Rappel rope and belay line rigging and setups.

(b) Conduct a minimum of 3 rappel descents, 2 standard rappels and 1 bagless rappel.

(c) Demonstrate the 3 “Lock-off” techniques.

Prerequisite. None.

Performance Standard. The SARRACUI should properly setup the rappel and belay line and conduct safety checks and conduct 3 rappel descents.

Ordnance. None.

External Syllabus Support. None.

RAP-401 1.5 1 ACFT

Goal. Conduct SAR rappelling operations and introduce short haul Procedures.

Requirement

(1) Brief/Discuss

(a) Safety considerations.

(b) Crew coordination and communication during rappel operations to include standard ICS terminology and hand and arm signals.

(c) Equipment inventory, preflight inspection and set-up.

(d) Short haul procedures and lock-off techniques.

(e) Hoisting Vest.

(2) Introduce/Demonstrate

(a) Rappel rope and belay line rigging and setups.

(b) Short haul procedures and use of hoisting vest.

(c) Conduct a minimum of 3 rappel descents with 1 ending and a short haul of a survivor in the hoisting vest.

Prerequisite. RAP-400.

Performance Standard. The SARRACUI should properly setup the rappel and belay line and conduct safety checks. The SARRACUI should perform 3 rappel descents and 1 short haul operation.

Ordnance. None.

External Syllabus Support. None.

RAP-402 1.5 R 1 ACFT

Goal. Conduct SAR rappelling and short haul operations.

Requirement

(1) Brief/Discuss

(a) Safety considerations.

(b) Crew coordination and communication during rappel operations to include standard ICS terminology and hand and arm signals.

(c) Equipment inventory, preflight inspection and set-up.

(d) Short haul procedures and lock-off techniques.

(e) Rappelling with equipment and short haul procedures with the rescue litter.

(2) Introduce/Demonstrate

(a) Rappel rope and belay line rigging and setups.

(b) Conduct a minimum of 3 rappel descents with equipment.

(c) Two descents should end with the short haul of a simulated survivor in the rescue litter.

Prerequisite. RAP-401.

Performance Standard. The SARRACUI should properly setup the rappel and belay line and conduct safety checks. The SARRACUI should perform 3 rappel descents and 1 short haul operation of a simulated survivor in the Stokes litter.

Ordnance. None.

External Syllabus Support. None.

RAP-403 1.5 R E 1 ACFT

Goal. Conduct HIRA Evaluation.

Requirement

(1) Brief/Discuss

(a) Safety considerations.

(b) Crew coordination and communication during rappel operations to include standard ICS terminology and hand and arm signals.

(c) Equipment inventory, preflight inspection and set-up.

(d) Short haul procedures and lock-off techniques.

(2) Introduce/Demonstrate

(a) Rappel rope and belay line rigging and setups.

(b) Standard and bagless rappels with equipment.

(c) Conduct a minimum of 2 rappel descents with each ending with a short haul of a simulated survivor in the rescue litter.

Prerequisite. RAP-402.

Performance Standard. The SARRACUI should properly setup the rappel and belay line and conduct safety checks without assistance. The SARRACUI should perform 2 rappel descents ending in short haul operations of a simulated survivor in the Stokes litter.

Ordnance. None.

External Syllabus Support. None.

2. Carrier Qualification

a. Purpose. Qualify during day and night/NVG shipboard landings.

b. General. Training includes FCLP NVG operations. Extended searches may require shipboard operations for refueling, casualty recovery, and/or remote site launches. The benefits of NVG operations cannot be over-emphasized, and every effort should be made to ensure all crewmembers are SAR Night Systems Qualified (NSQ).

(1) Refer to appropriate NATOPS Manual for carrier operations.

(2) Minimum of 3 approaches for each FCLP flight.

c. Crew Requirements. SARRACI/SARRACUI.

d. Prerequisite. Completion of Core Skill Advanced Training.

e. Flight Training (2 Flights, 3.0 Hours)

FCLP-410 1.5 R 1 ACFT

Goal. Conduct day carrier pattern familiarization.

Requirement

(1) Brief/Discuss

(a) Day FCLP patterns, approaches, and landings.

(b) Emergency procedures peculiar to shipboard operations to include water landing and ditching.

(c) Discuss aircrew coordination, verbal/visual communications used during shipboard landings and LSE signals.

(d) Aircraft lighting.

(2) Introduce/Demonstrate. Conduct a minimum of 3 FCLPs.

Prerequisite. None.

Performance Standard. The SARACUI, acting in the capacity of the crew chief, shall demonstrate the ability/knowledge to perform shipboard flight operations to include LSE hand and arm signals.

Ordnance. None.

External Syllabus Support. None.

FCLP-411 1.5 R 1 ACFT N/NS

Goal. Conduct night NVG carrier pattern familiarization.

Requirement

(1) Brief/Discuss

(a) Night FCLP patterns, approaches, and landings.

(b) Emergency procedures peculiar to shipboard operations to include water landing and ditching.

(c) Discuss aircrew coordination, verbal/visual communications used during shipboard landings and LSE signals.

(d) Aircraft lighting.

2. Introduce/Demonstrate. Conduct a minimum of 3 FCLP’s.

Prerequisite. NVG-303, FCLP-410.

Performance Standard. The SARRACUI, acting in the capacity of the crew chief, shall demonstrate the ability/knowledge to perform night shipboard flight operations to include night LSE hand and arm signals.

Ordnance. None.

External Syllabus Support. None.

350. SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS. Not applicable.

351. INSTRUCTOR UNDER TRAINING (IUT)

1. Purpose. Standardize the procedures qualifying syllabus instructors within individual units.

2. General

a. The SARRACIUT must demonstrate proficiency in instructing all evolutions in this stage.

b. Upon completion of this stage the SARRACIUT shall be designated a SAR Rescue Aircrewman Instructor (SARRACI).

c. Crew Requirements. SARRACI/SARRACIUT.

d. Prerequisites. Core Skill Advanced Stage complete.

e. Flight Training (4 Flights, 7.5 Hours)

IUT-500 1.5 R,E 1 ACFT

Goal. Demonstrate instructional techniques during day FAM/CAL/INT sorties.

Requirement

(1) Brief/Discuss

(a) Instructional Techniques.

(b) Crew responsibilities during start-up, taxi, take-off, in-flight emergencies, and landings.

(c) Crew responsibilities and communications during SAR procedures.

(2) Introduce/Demonstrate. Thorough knowledge of all procedures related to Familiarization, CALs, and Internal sorties.

Prerequisite. None.

Performance Standard. SARRACIUT shall demonstrate the ability to instruct familiarization maneuvers and internal patient, cargo and passenger embarking and debarking. SARRACIUT shall demonstrate instructional techniques during flight.

Ordnance. None.

External Syllabus Support. None.

IUT-501 1.5 R,E 1 ACFT

Goal. Demonstrate instructional techniques during Land SAR Exercise.

Requirement

(1) Brief/Discuss

(a) Instructional Techniques.

(b) SARRAC responsibilities for planning land SAREX.

(c) Evaluation guidelines and standards as identified by SOP.

(d) Crew responsibilities and communications during land SAREX.

(2) Introduce/Demonstrate. Thorough knowledge of all procedures related to planning and evaluating a land SAREX.

Prerequisite. IUT-500.

Performance Standard. SARRACIUT shall demonstrate the ability to instruct SAR maneuvers, including demonstrating and introducing search patterns and techniques, and hover and recovery maneuvers to SARRACs under instruction.

Ordnance. None.

External Syllabus Support. None.

IUT-502 1.5 R,E 1 ACFT

Goal. Demonstrate instructional techniques during SAR operations.

Requirement

(1) Brief/Discuss

(a) Instructional Techniques.

(b) SARRAC responsibilities while in route to training site.

(c) Crew responsibilities and communications during SAR procedures.

(2) Introduce/Demonstrate. Thorough knowledge of all procedures related to planning and assisting with an overwater SAR exercises.

Prerequisite. IUT-501.

Performance Standard. SARRACIUT shall demonstrate the ability to instruct SAR maneuvers, including demonstrating and introducing overwater search patterns and techniques, and hover and recovery maneuvers to SARRACs under instruction.

Ordnance. 1 MK-25, 1 MK-58.

External Syllabus Support. Safety boat with safety swimmer that is suitable for hoisting from (i.e. US Coast Guard or affiliate, US military vessels, local municipal rescue/FD water rescue units, etc.) Survivors as required.

IUT-503 3.0 R,E 1 ACFT

Goal. Plan and supervise a SARRAC NATOPS Evaluation.

Requirement

(1) Brief/Discuss

(a) Training site set-up and roles of simulated survivors to pertinent aircrew members.

(b) Special requests to simulate aircraft emergencies, failed gear, etc.

(c) Crew responsibilities and communications during SAR procedures.

(2) Introduce/Demonstrate. Thorough knowledge of all procedures related to planning and supervising an overwater SARRAC NATOPS Evaluation.

Prerequisite. IUT-500, IUT-501, IUT-502.

Performance Standard. SARRACIUT shall plan, coordinate, and conduct a SAREX unassisted.

Ordnance. 1 MK-25, 1 MK-58.

External Syllabus Support. Safety boat with safety swimmer that is suitable for hoisting from (i.e. US Coast Guard or affiliate, US military vessels, local municipal rescue/FD water rescue units, etc.) Survivors as required.

Additional Comments. Completion of the IUT-503 flight will satisfy the annual NATOPS Evaluation requirement.

352. GRADUATE LEVEL COURSES. Not applicable.

353. SPECIAL TRAINING

1. Requirements, Qualification, and Designations

a. Purpose. To qualify the SARRACUI for designation as a SARRAC/HIRA or to complete the annual NATOPS evaluation.

b. Prerequisite

(1) Completion of all required flights as specified by the individual’s training syllabus.

(2) Minimum of 50 flight hours for initial SARRAC.

c. Crew Requirements. SARRACI/SARRACUI.

d. Flight Training (3 Flights, 6.0 Hours)

RQD-600 1.5 R E 1 ACFT

Goal. H-46D NATOPS Evaluation.

Requirement. Perform a flight per the HH-46 NATOPS Flight Manual.

Prerequisite. None.

Performance Standard. The performance expected by the evaluator in this flight shall be commensurate with the experience level of the SARRAC under evaluation.

Ordnance. None.

External Syllabus Support. None.

RQD-602 3.0 R E 1 ACFT

Goal. SARRAC/HIRA qualification evaluation.

Requirement. A SARRAC/HIRA instructor will grade the SARRACUI's performance per the NATOPS Flight Manual, OPNAVINST 3130.6 and applicable SAR and medical publications.

Prerequisite. None.

Performance Standard. The performance expected by the evaluator in this flight shall be commensurate with the experience level of the SARRAC under evaluation.

Ordnance. 1 MK-25, 1 MK-58.

External Syllabus Support. Safety boat with safety swimmer that is suitable for hoisting from (i.e. US Coast Guard or affiliate, US military vessels, local municipal rescue/FD water rescue units, etc.) Survivors as required.

RQD-640 1.5 R E 1 ACFT

Goal. Crew Resource Management (CRM) Evaluation.

Requirement. A SARRAC/HIRA instructor will evaluate the SARRACUI's knowledge and application of CRM during brief, flight, and debrief.

Prerequisite. None.

Performance Standard. SARRAC shall demonstrate effective use of the 7 CRM critical skill areas.

Ordnance. None.

External Syllabus Support. None.

360. EXPENDABLE ORDNANCE REQUIREMENTS. These requirements are based on a "per crew" basis per OPNAVNOTE 8010.

ORDINANCE	100 SERIES	200 SERIES	300 SERIES	400 SERIES	REFRESHER	IUT	ANNUAL*
Mk-25 Flares		5	2			1	
Mk-58 Flares		7	2			1	

* Annual Ordnance requirements maintain an aircrew member at 85% MRP per T&R Program Manual.

AIRCRAFT: HH-46D (SAR) CREW POSITION: SAR RESCUE AIRCREWMAN

STAGE	FLIGHT TRAINING	REFLY CODE	HRS	MRP	R	E	REMARKS
CORE SKILL INTRODUCTION TRAINING							
FAM	108	*	1.5	1.5			1 ACFT
EP	109	*	1.5	2.0	X		1 ACFT
CAL	120	*	1.5	1.5			1 ACFT
INT	130	*	1.5	1.5	X		1 ACFT
	131	*	1.5	1.5	X		1 ACFT
EXT	140	*	1.5	2.0	X		1 ACFT
CORE SKILL BASIC TRAINING							
SAR	200	365	1.5	1.5			1 ACFT
	201	365	1.5	1.5			1 ACFT
	202	180	1.5	1.5			1 ACFT
	203	180	1.5	1.5	X		1 ACFT
	204	365	1.5	1.5	X		1 ACFT
	205	180	2.0	1.5	X		1 ACFT
	206	180	1.5	1.5	X		1 ACFT
	207	180	1.5	1.5	X		1 ACFT
	208	180	1.5	1.5	X		1 ACFT
	209	180	1.5	1.5	X		1 ACFT
CORE SKILL ADVANCED TRAINING							
NVG	300	180	1.5	1.5	X		1 ACFT N/NS
	301	180	1.5	1.5			1 ACFT N/NS
	302	180	1.5	1.5	X		1 ACFT N/NS
	303	180	1.5	1.5			1 ACFT N/NS
NSAR	321	180	1.5	1.5			1 ACFT N/(NS)
	322	180	1.5	1.5	X		1 ACFT N/(NS)
	323	180	2.0	1.5			1 ACFT N/(NS)
	324	180	1.5	1.5			1 ACFT N/(NS)
	325	180	1.5	2.0	X		1 ACFT N/(NS)
	326	180	1.5	2.0	X		1 ACFT N/(NS)
	327	180	1.5	2.0	X		1 ACFT N/(NS)
	328	365	1.5	2.0	X		1 ACFT N/(NS)
CORE SKILL PLUS TRAINING							
RAP	400	365	1.5	1.0			1 ACFT
	401	365	1.5	1.0			1 ACFT
	402	365	1.5	1.0	X		1 ACFT
	403	365	1.5	1.0	X	X	1 ACFT
FCLP	410	365	1.5	.5	X		1 ACFT
	411	365	1.5	.5	X		1 ACFT N(S)
INSTRUCTOR UNDER TRAINING FLIGHT PERFORMANCE REQUIREMENTS							
IUT	500	365	1.5		X	X	1 ACFT
	501	365	1.5		X	X	1 ACFT
	502	365	1.5		X	X	1 ACFT
	503	365	3.0		X	X	1 ACFT

Figure 3-1.--SAR Rescue Aircrewman Refly Interval, MRP.

AIRCRAFT: HH-46D (SAR) CREW POSITION: SAR RESCUE AIRCREWMAN

SPECIAL FLIGHT PERFORMANCE REQUIREMENTS

RQD	600	365	1.5	X	X	1 ACFT	(N)
	602	365	3.0	X	X	1 ACFT	(N)
	640	365	1.5	X	X	1 ACFT	(N)

Figure 3-1.--SAR Rescue Aircrewman Refly Interval, MRP--Continued.

SAR RESCUE AIRCREWMAN FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHT UPDATED
SAR	200	
	201	200
	202	
	203	202
	204	203, 202
	205	203, 202
	206	202, 200
	207	206, 203, 202
	208	207, 206, 203, 202
	209	206, 203, 202
NVG	300	
	301	300
	302	301, 300
	303	302, 301, 300
NSAR	321	202
	322	321,203,202
	323	322,321,203,202
	324	206
	325	324,322,321,207,206,203,202
	326	325,324,322,321,208,207,206,203,202
	327	324,322,321,209,206,203,202
	328	205
RAP	400	
	401	400
	402	401, 400
	403	402, 401, 400
FCLP	410	
	411	410
IUT	500	202
	501	205, 203, 202
	502	208, 207, 206, 203, 202
	503	208, 207, 206, 203, 202

Figure 3-2.--Rescue Aircrewman Flight Update Chaining.

SYLLABUS EVENT CONVERSION MATRIX

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	100 LEVEL		
FAM	100	FAM	108
	101	EP	109
INT	120	INT	130
	121		131
NFAM	130		

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	200 LEVEL		
CAL	200	CAL	120
	201		

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	300 LEVEL		
SAR	303		206
	304		203
	305		207
	306	RAP	402
	307	SAR	209
	308		204
	310		208
			205
	320	NSAR	323
	321		324
	326		325
	328		328
			321
			322
			326
			327
NVG	330	NVG	300

Figure 3-3.--SARRAC Syllabus Conversion Matrix.

SYLLABUS EVENT CONVERSION MATRIX

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	400 LEVEL		
NVG	400	NVG	301
	401		302
			303
		FCLP	410
FCLP	422		411
CQ	425		

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	500 LEVEL		
		IUT	500
			501
			502
			503

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	600 LEVEL		
RQD	601	RQD	600
			602
		CRM	640

Figure 3-3.--SARRAC Syllabus Conversion Matrix--Continued.

CHAPTER 4

HH-46D SAR MEDICAL TECHNICIAN (SMT)

FIGURES

*** * N O T E * ***

Aircrews shall include Crew Resource Management as part of their brief.

CHAPTER 4

HH-46D SAR MEDICAL TECHNICIAN (SMT)

400. MARINE SEARCH AND RESCUE UNIT – HH-46D

1. General. The capabilities defined and described in the core capability and unit template sections are provided to ensure each like-SAR unit maintains a common base of training and depth of capabilities. When sources permit, and when, in the judgment of the commander, additional training would significantly increase the unit's Search and Rescue capability, training to a level above these base capabilities is permitted. It is incumbent upon, and expected of, commanders to balance any increase in the depth of core capabilities against the long-term health and readiness of their unit while staying within resource constraints.

2. Mission. To provide heliborne SAR capabilities to tenant aviation units. Additional missions are secondary in nature and shall be accepted on a not-to-interfere basis only.

3. Mission Essential Task List (METL)

a. Provide search and rescue for tenant aircraft.

b. Provide supplemental search and rescue asset for U. S. Coast Guard and U.S. Air Force missions.

c. Provide MEDEVAC capability to local civilian agencies as required, on a not-to-interfere basis.

d. Provide airborne fire-fighting capability for MCAS facilities and to supplement Forest Service assets in the local area.

e. Provide supplemental search and rescue to local civilian agencies for non-law enforcement type missions such as searches, fire fighting, disaster response, or civilian MEDEVAC, when civilian agencies cannot respond.

f. Provide utility and logistics support missions of MCAS activities as directed by the Director of Operations, MCABEAST.

g. Enhance public relations for the Commanding General, MCABEAST through static displays and flight demonstrations as authorized by higher authority.

4. Table of Organization

3 HH-46D helicopters
8 Pilots
9 Crew Chiefs
6 SAR Swimmers
4 SAR Corpsmen

5. Squadron Core Capability

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained search and rescue operations, assuming at least 100% Primary Authorized Allowance (PAA), 90% in reporting status, and 90% T/O on hand in all MOSs. If <90%, core capability will be degraded by like-percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to launch 1 full mission capable aircraft crewed by a fully qualified aircrew at all times. This aircraft must be airborne within 15 minutes of alert when operating under SAR Condition I and 1 hour under SAR Condition II.

401. PROGRAMS OF INSTRUCTION (POI) FOR BASIC SMT

WEEKS	COURSE/PHASE	ACTIVITY
1-5	Academic Training/Naval Aircrew Candidate School	NAS Pensacola
6	Academic Training/Helicopter Rappel Indoctrination Course	HMT-303 Camp Pendleton
7-8	Ground Training	VMR-1, MCAS Beaufort
9-10	Core Skill Introduction Training	VMR-1, MCAS Beaufort
11-20	Core Skill Basic Training	VMR-1, MCAS Beaufort
21-24	Core Skill Advanced Training	VMR-1, MCAS Beaufort
25-26	Core Plus Training	VMR-1, MCAS Beaufort

402. POI FOR CONVERSION AND REFRESHER SMT

WEEKS	COURSE/PHASE	ACTIVITY
1-2	Ground Training	VMR-1, MCAS Beaufort
3-6	Core Skill Basic Training	VMR-1, MCAS Beaufort
7-10	Core Skill Advanced Training	VMR-1, MCAS Beaufort
11-12	Core Plus Training	VMR-1, MCAS Beaufort

410. GROUND TRAINING COURSES OF INSTRUCTION

COURSE	ACTIVITY
Naval Aircrew Candidate School	NAS Pensacola
Helicopter Rappel Indoctrination Course	HMT-303 Camp Pendleton
Emergency Medical Technician Training	Naval Hospital
I.V. Certification Training	Naval Hospital
Cardiopulmonary Resuscitation Certification	Naval Hospital

411. SQUADRON LEVEL TRAINING

NATOPS Flight Manual and NATOPS Pocket Checklist
SAR Publications
Safety Publications
Squadron Standard Operating Procedures (SOPs)
Inspection, Utilization, and Limitations of Personal Aviation Survival Equipment
Inspection, Utilization, and Limitations of SAR Equipment
Inspection, Utilization, and Limitations of SAR Medical Equipment
Hand and Arm Signals
Search and Rescue Techniques
Helicopter Rappel Training Manual (Student Guide)
Fire Bucket (Bambi Bucket) Operations Manual
Night Vision Device Ground Training
Ordnance Safety

420. FLIGHT TRAINING POI FOR BASIC SMT

a. SAR Medical Technicians Under Instruction (SMTUI) NEC 8201 will be programmed to fly the complete program of instruction.

b. Upon completion of Core Skill Advanced Training, SMT shall be designated NEC 8401.

c. All flights shall be flown with a designated SMT NATOPS Instructor.

1. Core Skill Introduction Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-	50.0
Familiarization	1	1.5	2.0
Emergency Procedures	1	1.5	2.0
Confined Area Landings	1	1.5	1.5
Internal Loads	2	3.0	3.0
Fire Fighting	1	1.5	1.5
	6	**9.0**	**60.0**

2. Core Skill Basic Training

STAGE	FLIGHTS	HOURS	PERCENT
Day Search and Rescue	10	15.5	15.0
	10	**15.5**	**15.0**

3. Core Skill Advanced Training

STAGE	FLIGHTS	HOURS	PERCENT
Night Vision Goggle	4	6.0	6.0
Night Search and Rescue	8	13.0	14.0
	12	**19.0**	**20.0**

4. Core Plus Training

STAGE	FLIGHTS	HOURS	PERCENT
Helicopter Inland Rescue	4	6.0	4.0
Carrier Qualification	2	3.0	1.0
	6	**9.0**	**5.0**

5. Instructor Under Training	**4**	**7.5**
6. Special Training	**3**	**6.0**

421. FLIGHT TRAINING FOR CONVERSION AND REFRESHER SMT

a. Conversion SAR Medical Technicians shall be programmed to fly the Conversion POI.

b. Previously qualified (Refresher) SMT NEC 8401 shall fly the Refresher POI.

c. Consideration may be given to previous experience and qualifications. The CO may waive flights per MCO P3500.14. The POI shall be developed on an individual basis and include at a minimum the flights listed below.

d. All flights shall be flown with a designated SMT NATOPS Instructor.

1. Core Skill Introduction Training

STAGE	FLIGHTS	HOURS
Basic Qualification	-	-
Emergency Procedures	1	1.5
Internal Loads	1	1.5
Fire Fighting	1	1.5
	3	**4.5**

2. Core Skill Basic Training

STAGE	FLIGHTS	HOURS
Day Search and Rescue	8	12.5
	8	**12.5**

3. Core Skill Advanced Training

STAGE	FLIGHTS	HOURS
Night Vision Goggle	2	3.0
Night Search and Rescue	5	8.0
	7	**11.0**

4. Core Plus Training

STAGE	FLIGHTS	HOURS
Helicopter Inland Rescue	2	3.0
Carrier Qualification	2	3.0
	4	**6.0**

5. Instructor Under Training	**2**	**3.0**
6. Special Training	**3**	**6.0**

430. SIMULATOR TRAINING. Not applicable.

440. FLIGHT PERFORMANCE REQUIREMENTS

1. Purpose. Promote standardization of SMT procedures and to establish a minimum training program for those personnel assigned as an SMT aboard the HH-46D.

2. General

a. Personnel shall complete the Naval Aircrew Candidate School prior to commencement of flight training.

b. Personnel should complete Helicopter Rappel Indoctrination Course as soon as possible. Personnel are required to complete Helicopter Rappel Indoctrination Course prior to commencement of Helicopter Inland Rescue Aircrewmen (HIRA) training.

c. All flights shall terminate with a comprehensive debrief with emphasis on the aircrew's performance using all evaluation techniques.

d. Aircrews should fly events annotated with an N at least 30 minutes after official sunset. Pilots may fly events annotated with (N) at night.

f. Aircrews shall fly events annotated with an NS with NVGs for the entire flight. Aircrews may fly events with (NS) with the option of using NVGs.

3. Refly Interval. Figure 4-1 shows refly interval and Mission Readiness Percentage for NEC 8401.

4. Aircrew Evaluation Flights. Flights annotated with an E are:

a. NATOPS evaluation form filled out annually upon completion of the NATOPS Check (RQD-600).

b. Crew Resource Management (CRM) evaluation form filled out annually upon completion of the CRM Check (RDQ-640).

c. OPNAVINST 3130.6 evaluation form filled out annually upon completion of the SMT/HIRA Check (RDQ-601).

d. Any flight in the Core Skill Basic, Core Skill Advanced, or Core Plus phase as recommended by the Squadron Standardization Board.

5. Crew Resource Management (CRM). Aircrews shall include CRM as part of their mission brief. A CRM evaluation form shall be filled out annually upon completion of the CRM Check (RDQ-640).

441. CORE SKILL INTRODUCTION TRAINING

1. Familiarization

a. Purpose. Familiarize the SMTUI with HH-46D operations and procedures.

b. General. These flights may be flown on any appropriate flight of the pilot syllabus.

c. Crew Requirements. SMTI/SMTUI.

d. Flight Training (2 Flights, 3.0 Hours)

FAM-108 1.5 C 1 ACFT

Goal. Introduce HH-46 characteristics, SMT responsibilities, discuss crew coordination, and conduct area familiarization.

Requirement

(1) Brief/Discuss

(a) HH-46D nomenclature.

(b) Preflight/postflight procedures.

(c) Equipment inventory and inspection.

(d) Look-out doctrine.

(2) Introduce/Demonstrate

(a) Preflight/Postflight procedures.

(b) Equipment inventory and inspection.

(c) Look-out techniques and procedures.

Prerequisite. None.

Performance Standard. The SMTUI should demonstrate basic knowledge of the HH-46D, SAR equipment, and be able to perform preflight and postflight procedures.

Ordnance. None.

External Syllabus Support. None.

EP-109 1.5 C,R 1 ACFT

Goal. Conduct HH-46 familiarization and introduce emergency procedures.

Requirement

(1) Brief/Discuss

(a) HH-46D nomenclature.

(b) Preflight/postflight procedures.

(c) Equipment inventory and inspection.

(d) Ground and in-flight emergencies.

(e) Ditching and Egress procedures.

(2) Introduce/Demonstrate

(a) Preflight/postflight procedures to include equipment inventory and inspection.

(b) Ground and in-flight emergencies.

(c) Ditching and egress procedures.

Prerequisite. FAM-108.

Performance Standard. The SMTUI should demonstrate knowledge of the HH-46D start-up procedures, proper action in response to ground emergencies, in-flight emergencies, and ditching and egress procedures.

Ordnance. None.

External Syllabus Support. None.

2. Confined Area Landings (CAL)

a. Purpose. Instruct the SMTUI in his duties when landing in confined areas.

b. General. These flights may be flown on any flight of the pilot CAL stage.

c. Crew Requirements. SMTI/SMTUI.

d. Flight Training (1 Flight, 1.5 Hours)

CAL-l20 1.5 C 1 ACFT

Goal. Introduce CALs and lookout doctrine.

Requirement

(1) Brief/Discuss

(a) HH-46D nomenclature to include specific blade clearance lengths and measurements.

(b) CAL zone evaluation.

(c) Crew Coordination and responsibilities to include obstacle avoidance in the CAL.

(d) Standard voice communications and lost ICS procedures.

(e) Emergency procedures and departure routes.

(2) Introduce/Demonstrate

(a) HH-46D nomenclature to include specific blade clearance lengths and measurements.

(b) CAL zone selection and evaluation.

(c) Crew Coordination and responsibilities.

(d) Standard voice communications and lost ICS procedures.

(e) Emergency procedures and departure routes.

(f) Conduct at least 3 CALs with 1 performed with the SMTUI acting as the crew chief.

Prerequisite. EP-109.

Performance Standard. The SMTUI should demonstrate knowledge of CAL procedures, crew coordination and communication by conducting several CALs.

Ordnance. None.

External Syllabus Support. None.

3. Internal Loads

a. Purpose. Introduce the SMTUI to cargo and passenger loading and unloading procedures.

b. General. These flights may be flown on any appropriate flight of the pilot syllabus.

c. Crew Requirements. SMTI/SMTUI.

d. Flight Training (2 Flights, 3.0 Hours)

INT-130 1.5 C 1 ACFT

Goal. Review procedures for cargo loading and unloading.

Requirement

(1) Brief/Discuss

(a) Cargo loading/unloading procedures.

(b) Tie-down and securing cargo.

(2) Introduce/Demonstrate

(a) Cargo loading/unloading procedures.

(b) Tie-down and securing cargo.

Prerequisite. CAL-120.

Performance Standard The SMTUI should demonstrate proper tiedown procedures for internal equipment.

Ordnance. None.

External Syllabus Support. None.

INT-131 1.5 C,R 1 ACFT

Goal. Review procedures for patient loading, passenger briefing and safety procedures.

Requirement

(1) Brief/Discuss. Passenger manifesting and safety briefing.

(2) Introduce/Demonstrate. Passenger manifesting and safety briefing.

Prerequisite. INT-130.

Performance Standard. The SMTUI should demonstrate proper procedures for conducting a passenger safety brief.

Ordnance. None.

External Syllabus Support. None.

4. Fire Fighting

a. Purpose. Develop the ability to conduct water bucket operations.

b. General. These flights may be flown with water bucket flights in the pilot syllabus.

c. Crew Requirements. SMTI/SMTUI.

d. Flight Training (1 Flight, 1.5 Hours)

FF-140 1.5 C,R 1 ACFT

Goal. Review procedures for Fire Bucket (Bambi Bucket) operations.

Requirement

(1) Brief/Discuss

(a) Water (Bambi) bucket operations.

(b) Preflight/postflight procedures and limitations for external cargo hook and Fire Bucket.

(c) Communication procedures to include standard terminology and hand and arms signals for lost ICS procedures.

(d) Emergency procedures to include lost ICS and emergency cut-away (Pickle).

(2) Introduce/Demonstrate

(a) Preflight procedures and limitations for external cargo hook and Fire Bucket.

(b) Equipment hook up and staging procedures.

(c) Communication procedures to include standard terminology and hand and arms signals for lost ICS procedures.

(d) Emergency procedures to include lost ICS and Emergency cut-away (Pickle).

(e) Postflight procedures and bucket maintenance.

Prerequisite. INT-130.

Performance Standard. The SMTUI should conduct preflight and post flight inspection on the Bambi Bucket as well as demonstrate standard communication during bucket operations.

Ordnance. None.

External Syllabus Support. None.

442. CORE SKILL BASIC TRAINING

1. Day Search and Rescue

a. Purpose. Familiarize the SMTUI with SAR mission and operations, aircraft limitations and emergency procedures. To develop proficiency in loading cargo/passengers, in-flight procedures, SAR procedures and requirements, and knowledge of safety regulations.

b. General. The T&R Program Manual addresses the commanding officer's authority to modify this training as required. Personnel will complete the appropriate ground schools prior to beginning the flight-training syllabus. A NATOPS instructor will monitor the SMTUI's progress during the flight-training syllabus.

c. Crew Requirements. SMTI/SMTUI.

2. Navigation/Medical Evacuation (MEDEVAC)

a. Purpose

(1) Familiarize the SMTUI with general navigational techniques while exploring the surrounding areas and visiting area hospitals.

(2) Practice procedures for MEDEVAC and providing continued care while en route to a Medical Treatment Facility.

b. General. The T&R Program Manual addresses the commanding officer's authority to modify this training as required. Personnel will complete the appropriate ground schools prior to beginning the flight training syllabus. A NATOPS instructor will monitor the SMTUI’s progress during the flight training syllabus.

c. Prerequisite. The following flights of the HH-46 SMT syllabus shall be satisfactorily completed prior to commencing the Core Skill Introduction training phase (6 Flights, 9.0 Hours): FAM-l08/109, CAL-120, INT-130/131, and FF-140.

d. Crew Requirements. SMTI/SMTUI.

e. Flight Training (2 Flights, 3.0 Hours)

SAR-200 1.5 C 1 ACFT

Goal. Introduce navigation procedures and local area hospital landing zones.

Requirement

(1) Brief/Discuss

(a) Navigation procedures to include use of Global Positioning System (GPS) and aeronautical charts.

(b) Area hospitals and their medical capabilities/locations.

(c) Cabin preparation and rigging of the litters.

(d) Use of radios in relaying patient information to the destination medical facility and use of the aircraft utility electrical power supply.

(2) Introduce/Demonstrate

(a) Identify local area hospital Landing Zones.

(b) Use of aircraft electrical system and radio to contact receiving medical facility.

Prerequisite. None.

Performance Standard. The SMTUI should demonstrate utilization of the aircraft electrical systems for proper operation of auxiliary medical equipment. The flight will include navigation to local area hospitals for identification and familiarization of landing zones.

Ordnance. None.

External Syllabus Support. Clearance from area hospital for landing at pads.

SAR-201 1.5 C,R 1 ACFT

Goal. Introduce navigation procedures and distant area hospital landing zones and introduce procedures for MEDEVAC.

Requirement

(1) Brief/Discuss

(a) Navigation procedures.

(b) Area hospitals and their medical capabilities/locations.

(c) Local medical protocols and Flight surgeon recall procedures for hospital-to-hospital transfers.

(d) Cabin preparation and rigging of the litters.

(e) Use of radios in relaying patient information to the destination medical facility and use of the aircraft utility electrical power supply.

(2) Introduce/Demonstrate

(a) Identify hospital Landing Zones.

(b) Prepare the cabin to accept patients.

(c) Receive report from onscene providers, perform assessments and package patient for transport.

(d) Perform an actual/simulated medical evacuation to an airport/hospital facility while providing inflight care/monitoring.

(e) Use aircraft electrical system and radio to contact receiving facility.

Prerequisite. NAV-200.

Performance Standard. The SMTUI should demonstrate rigging of aircraft to accept patient and demonstrate a thorough knowledge of medical protocols. The flight will include navigation to distant area hospitals for identification and familiarization of landing zones.

Ordnance. None.

External Syllabus Support. Local EMS or hospital if desired.

SAR-202 1.5 C 1 ACFT

Goal. Conduct day overland approach patterns and CALs.

Requirement

(1) Brief/Discuss

(a) Standard approach parameters and search patterns.

(b) CAL procedures.

(c) Standard ICS voice communications.

(d) Remote hover coupler station.

(e) Emergency “Wave-Off” conditions and procedures.

(2) Introduce/Demonstrate

(a) Normal approach patterns and standard ICS terminology.

(b) Perform a minimum of 3 CALS. 1 should be conducted while acting in the capacity of the crew chief.

(c) Practice positioning the aircraft over a simulated survivor utilizing standard ICS terminology.

(d) Use remote hover coupler station for familiarization.

(e) Practice positioning the aircraft over a simulated survivor utilizing the remote hover station and standard ICS terminology.

Prerequisite. NAV-201.

Performance Standard. The SMTUI should demonstrate standard terminology while conducting approach patterns, CALs, and remote hover station use.

Ordnance. None.

External Syllabus Support. None.

SAR-203 1.5 C,R 1 ACFT

Goal. Conduct day overland hoisting operations.

Requirement

(1) Brief/Discuss

(a) Hoist capability and limitations.

(b) Emergency procedures and troubleshooting techniques for hoist failure.

(c) Use of quick splice and Chicago grip.

(d) Review hand and arm signals and Aldis lamp signals.

(e) Rescue equipment functions, capacities, and limitations.

(f) Rigging of rescue equipment for hoisting evolutions.

(2) Introduce/Demonstrate

(a) Rigging of rescue strop, force penetrator/rescue seat, rescue litter, MEDEVAC litter, and rescue net.

(b) Perform a minimum of 2 hoisting evolutions, 1 with the rescue strop and 1 with the rescue net while acting as hoist operator.

(c) Demonstrate use of quick splice and Chicago grip.

(d) Perform a minimum of 2 hoisting evolutions with the Rescue litter and/or MEDEVAC litter while on the ground acting as the SMT.

Prerequisite. SAR-202.

Performance Standard. While in the aircraft acting as the hoist operator, the SMTUI should demonstrate proper preparation of equipment and safe hoist operation. While on the ground, the SMTUI should demonstrate proper recovery of equipment.

Ordnance. None.

External Syllabus Support. None.

SAR-204 1.5 C,R 1 ACFT

Goal. Conduct day hoist operations with rescue devices utilizing the internal winch through the cabin floor rescue hatch and aft cargo hatch.

Requirement

(1) Brief/Discuss

(a) Internal winch capabilities and limitations.

(b) Setup of rigging and use of winch control station and remote handgrip.

(c) Emergency procedures and troubleshooting technique for winch failure.

(d) Review standard ICS voice communications and hand and arm signals.

(e) Review rigging of rescue equipment for winching evolutions.

(2) Introduce/Demonstrate

(a) Setup of rigging and remote handgrip.

(b) Complete a minimum of 2 winching evolutions with the rescue net and rescue litter while functioning as the winch operator.

(c) Complete a minimum of 2 winching evolutions with the rescue seat and rescue/MEDEVAC litter while on the ground acting as the SMT.

Prerequisite. SAR-203.

Performance Standard. While in the aircraft acting as the winch operator, the SMTUI should demonstrate proper preparation of equipment and safe winch operation. While on the ground, the SMTUI should demonstrate proper recover of equipment.

Ordnance. None.

External Syllabus Support. None.

SAR-205 2.0 C,R 1 ACFT

Goal. Conduct day overland SAR exercise.

Requirement

(1) Brief/Discuss

(a) Overland SAR procedures, to include, search patterns and CAL selection.

(b) Crewmember responsibilities and cabin preparation.

(c) Communication procedures.

(2) Introduce/Demonstrate

(a) Cabin preparation and actions while en route to scene.

(b) Patient(s) assessment, treatment and packaging.

(c) Loading and securing patient(s) inside aircraft.

(d) Provide care while en route to Medical Treatment Facility.

(e) Unloading and transferring patient(s).

Prerequisite. SAR-203, SAR-201.

Performance Standard. The SMTUI should conduct a Land SAREX to include proper treatment, packaging, and recovery of up to 4 patients.

Ordnance. None.

External Syllabus Support. Local EMS/Fire Rescue if available.

SAR-206 1.5 C,R 1 ACFT

Goal. Conduct day maritime SAR approach training.

Requirement

(1) Brief/Discuss

(a) Doppler/Coupler capabilities and procedures to include standard terminology and remote hover station.

(b) Crewmember responsibility during approach procedures.

(c) Flare capabilities, arming/disarming, and deployment techniques.

(2) Introduce/Demonstrate

(a) Flare deployment

(b) Voice communication using standard terminology.

(c) Verbal control of aircraft movements during a manual approach. SMTUI will complete a minimum of 2 manual approach evolutions.

(d) Operation of the remote hover station during a coupled approach. SMTUI will complete a minimum of 2 coupled approach evolutions.

Prerequisite. SAR-202.

Performance Standard. The SMTUI should demonstrate proper flare arming/disarming and deployment. The SMTUI should demonstrate control of the aircraft utilizing standard terminology during SAR approaches both manual and coupled hovers.

Ordnance. 1 Mk-25 Flare, 1 Mk-58 Flare.

External Syllabus Support. None.

SAR-207 1.5 C,R 1 ACFT

Goal. Conduct day Rescue Swimmer deployments and recoveries. Introduce hoist recoveries utilizing the rescue strop and rescue net.

Requirements

(1) Brief/Discuss

(a) Impact of sea state and weather concerning swimmer deployments.

(b) Swimmer deployments and recoveries procedures.

(c) Normal and emergency hoisting procedures.

(d) ICS communications and standard hand and arm signals.

(2) Introduce/Demonstrate

(a) Deployment and recovery of the swimmer at least twice.

(b) Deployment and recovery of the rescue strop with a simulated survivor at least once.

(c) Deployment and recovery of the rescue net with a simulated survivor at least once.

(d) Use of the remote hover station during one of the hoisting evolutions.

Prerequisites. SAR-203, SAR-206.

Performance Standard. The SMTUI should demonstrate proper control of the aircraft utilizing standard terminology during SAR approaches, swimmer deployments and hoist recoveries.

Ordnance. 1 Mk-58 Flare.

External Syllabus Support. Secondary rescue vessel and Rescue Swimmer.

SAR-208 1.5 C,R 1 ACFT

Goal. Conduct day Rescue Swimmer deployments and recoveries. Introduce recoveries with rescue and MEDEVAC litters. Introduce swimmer transport via the Short Haul.

Requirements

(1) Brief/Discuss

(a) Impact of sea state and weather concerning swimmer deployments.

(b) Normal and emergency hoisting procedures.

(c) Swimmer deployments and recoveries.

(d) ICS communications and hand and arm signals.

(e) Short Haul purpose and procedures.

(2) Introduce/Demonstrate

(a) Perform a minimum of 2 Rescue Swimmer deployment and recoveries.

(b) Perform a minimum of 2 MEDEVAC litter deployment and recoveries with a simulated survivor.

(c) Perform a minimum of 1 Rescue (stokes) litter deployment and recoveries with a simulated survivor.

(d) Perform a minimum of 1 Short Haul of the Rescue Swimmer.

Prerequisites. SAR-207.

Performance Standard. The SMTUI should demonstrate proper control of the aircraft utilizing standard terminology during SAR approaches, swimmer deployments and hoist recoveries.

Ordnance. 1 Mk-58 Flare.

External Syllabus Support. Secondary rescue vessel and Rescue Swimmer.

SAR-209 1.5 C,R 1 ACFT

Goal. Conduct Day SAR hoist training to a boat or ship. Introduce hoist deployment and recovery of the SMT, Rescue Swimmer and SAR Equipment.

Requirement

(1) Brief/Discuss

(a) Normal and emergency procedures to include standard ICS terminology and hand and arm signals.

(b) Aircraft approach procedures and positioning.

(c) Special considerations when operating around a boat or ship to include the effects of sea state and obstacles.

(d) SMT/Rescue Swimmer and equipment hook-up procedures.

(2) Introduce/Demonstrate

(a) Deployment and recovery of SMT/Rescue Swimmer to the boat or ship.

(b) Hoisting procedures utilizing the rescue/MEDEVAC litter, rescue net, and rescue strop.

(c) Conduct a minimum of 2 rescue/MEDEVAC litter deployment and recoveries utilizing the trail line.

(d) Conduct a minimum of 1 recovery utilizing the rescue strop.

Prerequisites. SAR-203, SAR-206.

Performance Standard. The SMTUI should demonstrate proper hook-up procedures of both self and equipment in preparation to be hoisted to a boat or ship. After being hoisted, the SMTUI should demonstrate proper recovery of equipment via hoist.

Ordnance. 1 Mk-25 flare.

External Syllabus Support. Secondary Rescue Vessel that is suitable for hoisting from (i.e. US Coast Guard or affiliate, US Military Vessels, Local Municipal Rescue/FD water rescue units, etc.)

443. CORE SKILL ADVANCED TRAINING

1. Night Vision Goggle (NVG) Operations

a. Purpose. Develop proficiency required to safely conduct basic operations, navigation, and search patterns utilizing NVGs.

b. General. Rappels, hoists and Short Hauls should not be conducted while using NVGs.

c. Prerequisite. The following flights of the HH-46 SMT syllabus shall be satisfactorily completed prior to commencing the Core Skill Advanced training phase:

(1) Core Skill Introduction Training: (6 flights, 9.0 hours).

(2) Core Skill Basic Training: Day SAR (10 flights, 15.5 hours).

d. Crew Requirements. CCNSSI/SMTUI.

e. Flight Training (4 Flights, 6.0 Hours)

NVG-300 1.5 C,R 1 ACFT N NS

Goal. Introduce NVG low work and touch and go landings under ambient light conditions of .0022 LUX or greater.

Requirement

(1) Brief/Discuss

(a) Use and limitations of NVGs

(b) NVG tube/battery failures and emergency procedures.

(c) Lookout doctrine and obstacle clearances.

(2) Introduce/Demonstrate. Wearing and use of NVGs.

Prerequisite. None.

Performance Standard. The SMTUI should properly utilize NVGs while conducting basic flight operations to gain familiarity.

Ordnance. None.

External Syllabus Support. None.

NVG-301 1.5 C 1 ACFT N NS

Goal. Develop proficiency in conducting NVG land SAR operations.

Requirement

(1) Brief/Discuss

(a) Use and limitations of NVGs to include emergency procedures.

(b) CALs.

(2) Introduce/Demonstrate. Wearing and use of NVGs while conducting a minimum of three CALs.

Prerequisite. NVG-300

Performance Standard. The SMTUI should use NVGs while conducting CALs to improve familiarity and increase NVG experience.

Ordnance. None.

External Syllabus Support. None.

NVG-302 1.5 C,R 1 ACFT N NS

Goal. Develop proficiency with NVGs during overwater SAR operations.

Requirement

(1) Brief/Discuss

(a) Use and limitations of NVGs to include emergency procedures.

(b) Search patterns and aircraft lighting.

(c) Flare usage and deployment.

(d) Approach procedures.

(2) Introduce/Demonstrate. Wearing and use of NVGs while conducting a minimum of 2 approaches, 1 manual and 1 coupled.

Prerequisite. NVG-301, NVG-300.

Performance Standard. The SMTUI should use NVGs while conducting SAR approach training to increase NVG experience.

Ordnance. 1 MK-25, 1 MK-58.

External Syllabus Support. None.

NVG-303 1.5 C 1 ACFT N NS

Goal. Fly extended navigation and search patterns. Develop proficiency with NVGs during night SAR operations.

Requirement

(1) Brief/Discuss

(a) Use and limitations of NVGs to include emergency procedures.

(b) Search patterns and aircraft lighting.

(c) Flare usage and deployment.

(d) Approach procedures.

(2) Introduce/Demonstrate. Wearing and use of NVGs while conducting navigation and search patterns.

Prerequisite. NVG-302.

Performance Standard. The SMTUI should use NVGs while conducting SAR approach training and search patterns to increase NVG experience.

Ordnance. 1 MK-25, 1 MK-58.

External Syllabus Support. None.

2. Night SAR

a. Purpose. Familiarize the SMTUI with the SAR mission and operations, aircraft lighting systems, and emergency procedures at night. To develop proficiency in loading cargo/passengers, in-flight procedures, SAR procedures and requirements, and knowledge of safety regulations.

b. General. The T&R Program Manual addresses the commanding officer's authority to modify this training as required. Personnel will complete the appropriate ground schools prior to beginning the flight training syllabus. A NATOPS instructor will monitor the SMTUI's progress during the flight-training syllabus.

c. Prerequisite. The following sections or flights of the HH-46 SMT syllabus shall be satisfactorily completed prior to commencing the night SAR qualification training phase (20 Flights, 31.0 Hours):

(1) Core Skill Introduction training (6 flights, 9.0 hours).

(2) Core Skill Basic training:

(a) Navigation/MEDEVAC (2 flights, 3.0 hours).

(b) Day SAR (8 flights, 12.5 hours).

(c) NVG Operation (4 flights, 6.0 hours).

d. Crew Requirements. SMTI/SMTUI.

e. Flight Training (8 Flights, 13.0 Hours)

NSAR-321 1.5 C 1 ACFT N(NS)

Goal. Conduct night overland approach patterns and CALs.

Requirement

(1) Brief/Discuss

(a) Aircraft Lighting Systems.

(b) Standard approach parameters and search patterns.

(c) CAL procedures.

(d) Standard ICS voice communications.

(e) Remote hover coupler station.

(f) Emergency “Wave-Off” conditions and procedures.

(2) Introduce/Demonstrate

(a) Normal approach patterns and standard ICS terminology.

(b) Perform a minimum of 3 CALS. One should be conducted while acting in the capacity of the crew chief.

(c) Practice positioning the aircraft over a simulated survivor utilizing standard ICS terminology.

(d) Use remote hover coupler station for familiarization.

(e) Practice positioning the aircraft over a simulated survivor utilizing the remote hover station and standard ICS terminology.

Prerequisite. SAR-202.

Performance Standard. The SMTUI should demonstrate standard terminology while conducting approach patterns, CALs, and remote hover station use.

Ordnance. None.

External Syllabus Support. None.

NSAR-322 1.5 C,R 1 ACFT N(NS)

Goal. Conduct night overland hoisting operations.

Requirement

(1) Brief/Discuss

(a) Hoist capability and limitations.

(b) Emergency procedures and troubleshooting techniques for hoist failure.

(c) Review hand and arm signals and Aldis lamp signals.

(d) Rigging and chemlite placement for rescue equipment for hoisting evolutions.

(2) Introduce/Demonstrate

(a) Rigging of chemlites on the rescue strop, force penetrator/rescue seat, rescue litter, MEDEVAC litter, and rescue net.

(b) Perform a minimum of 2 hoisting evolutions, 1 with the rescue strop and 1 with the rescue net while acting as hoist operator.

(c) Perform a minimum of 2 hoisting evolutions with the rescue litter and/or MEDEVAC litter while on the ground acting as the SMT.

Prerequisite. NSAR-321, SAR-203.

Performance Standard. Acting as the hoist operator, the SMTUI should demonstrate proper preparation of equipment and safe hoist operation. While on the ground, the SMTUI should demonstrate proper recovery of equipment.

Ordnance. None.

External Syllabus Support. None.

NSAR-323 2.0 C 1 ACFT N(NS)

Goal. Conduct night overland SAR exercise.

Requirement

(1) Brief/Discuss

(a) Overland SAR procedures to include search patterns and CAL selection.

(b) Crewmember responsibilities and cabin preparation.

(c) Communication procedures.

(2) Introduce/Demonstrate

(a) Cabin preparation and actions while en route to scene.

(b) Patient(s) assessment, treatment and packaging.

(c) Loading and securing patient(s) inside aircraft.

(d) Provide care while en route to Medical Treatment Facility.

(e) Unloading and transferring patient(s).

Prerequisite. NSAR-322, SAR-205.

Performance Standard. SMTUI should conduct a land SAREX to include proper treatment, packaging, and recovery of up to 4 patients.

Ordnance. None.

External Syllabus Support. Local EMS/Fire Rescue if available.

NSAR-324 1.5 C 1 ACFT N(NS)

Goal. Conduct night maritime SAR approach training.

Requirement

(1) Brief/Discuss

(a) Doppler/Coupler capabilities and procedures to include standard terminology and remote hover station.

(b) Crewmember responsibility during approach procedures.

(c) Flare capabilities, arming/disarming, and deployment techniques.

(2) Introduce/Demonstrate

(a) Flare deployment.

(b) Voice communication using standard terminology.

(c) Verbal control of aircraft movements during a manual approach. SMTUI will complete a minimum of 2 manual approach evolutions.

(d) Operation of the remote hover station during a coupled approach. SMTUI will complete a minimum of 2 coupled approach evolutions.

Prerequisite. NSAR-321, SAR-206.

Performance Standard. The SMTUI should demonstrate proper flare arming/disarming and deployment. The SMTUI should demonstrate control of the aircraft utilizing standard terminology during SAR approaches both manual and coupled hovers.

Ordnance. 1 Mk-25 Flare, 1 Mk-58 Flare.

External Syllabus Support. None.

NSAR-325 1.5 C,R 1 ACFT N(NS)

Goal. Conduct night Rescue Swimmer deployments and recoveries. Introduce hoist recoveries utilizing the rescue strop and rescue net.

Requirements

(1) Brief/Discuss

(a) Impact of sea state and weather concerning swimmer deployments.

(b) Swimmer deployments and recoveries procedures.

(c) Normal and emergency hoisting procedures.

(d) ICS communications and standard hand and arm signals.

(2) Introduce/Demonstrate

(a) Deployment and recovery of the swimmer at least twice.

(b) Deployment and recovery of the rescue strop with a simulated survivor at least once.

(c) Deployment and recovery of the rescue net with a simulated survivor at least once.

(d) Use of the remote hover station during one of the hoisting evolutions.

Prerequisites. SAR-207.

Performance Standard. The SMTUI should demonstrate proper control of the aircraft utilizing standard terminology during SAR approaches, swimmer deployments and hoist recoveries.

Ordnance. 1 Mk-58 Flare.

External Syllabus Support. Secondary rescue vessel and Rescue Swimmer.

NSAR-326 1.5 C,R 1 ACFT N(NS)

Goal. Conduct night Rescue Swimmer deployments and recoveries. Introduce recoveries with rescue and MEDEVAC litters. Introduce Swimmer transport via the Short Haul.

Requirements

(1) Brief/Discuss

(a) Impact of sea state and weather concerning swimmer deployments.

(b) Normal and emergency hoisting procedures.

(c) Swimmer deployments and recoveries.

(d) ICS communications and hand and arm signals.

(e) Short Haul purpose and procedures.

(2) Introduce/Demonstrate

(a) Perform a minimum of 2 Rescue Swimmer deployment and recoveries.

(b) Perform a minimum of 2 MEDEVAC litter deployment and recovery with a simulated survivor.

(c) Perform a minimum of 1 Rescue (stokes) litter deployment and recovery with a simulated survivor.

(d) Perform a minimum of 1 Short Haul of the Rescue Swimmer.

Prerequisites. NSAR-325, SAR-208.

Performance Standard. The SMTUI should demonstrate proper control of the aircraft utilizing standard terminology during SAR approaches, swimmer deployments and hoist recoveries.

Ordnance. 1 Mk-58 Flare.

External Syllabus Support. Secondary rescue vessel and Rescue Swimmer.

NSAR-327 1.5 C,R 1 ACFT N(NS)

Goal. Conduct night SAR hoist training to a boat or ship. Introduce hoist deployment and recovery of the SMT, Rescue Swimmer and SAR Equipment.

Requirement

(1) Brief/Discuss

(a) Normal and emergency procedures to include standard ICS terminology and hand and arm signals.

(b) Aircraft approach procedures and positioning.

(c) Special considerations when operating around a boat or ship to include the effects of sea state and obstacles.

(d) SMT/Rescue Swimmer and equipment hook-up procedures.

(2) Introduce/Demonstrate

(a) Deployment and recovery of SMT/Rescue Swimmer to the boat or ship.

(b) Hoisting procedures utilizing the rescue/MEDEVAC litter, rescue net, and rescue strop.

(c) Conduct a minimum of 2 rescue/MEDEVAC litter deployment and recoveries utilizing the trail line.

(d) Conduct a minimum of 1 recovery utilizing the rescue strop.

Prerequisites. NSAR-324, NSAR-322, SAR-209.

Performance Standard. The SMTUI should demonstrate proper hook-up procedures of both self and equipment in preparation to be hoisted to a boat or ship. After being hoisted, the SMTUI should demonstrate proper recovery of equipment via hoist.

Ordnance. 1 Mk-25 flare.

External Syllabus Support. Secondary Rescue Vessel that is suitable for hoisting from (i.e. US Coast Guard or affiliate, US Military Vessels, Local Municipal Rescue/FD water rescue units, etc.).

NSAR-328 2.0 C,R 1 ACFT N(NS)

Goal. Participate in a SAR Exercise (SAREX).

Requirement

(1) Brief/Discuss

(a) Overland/overwater SAR procedures.

(b) Search Patterns.

(c) Night/low visibility procedures.

(d) Medical treatment procedures/protocols.

(e) Transportation protocols.

(2) Introduce/Demonstrate

(a) Rescue techniques and medical treatment of injured patients.

(b) Conduct the rescue and treatment of a minimum of 2 patients from either land or water in either day or night conditions.

Prerequisites. NSAR-321 through NSAR-327, SAR-209, SAR-327.

Performance Standard. The SMTUI should conduct a land SAREX to include proper treatment, packaging, and recovery of up to 4 patients.

Ordnance. 1 MK-25, 1 MK-58.

External Syllabus Support. Local EMS/Fire Rescue if available. Secondary Rescue Vessel that is suitable for hoisting from (i.e. US Coast Guard or affiliate, US Military Vessels, Local Municipal Rescue/FD water rescue units, etc.).

444. CORE PLUS TRAINING

1. Helicopter Inland Rescue Aircrewman (HIRA) Rappel Operations

a. Purpose. Develop the SMT's knowledge and proficiency of rappel procedures, equipment limitations, equipment set-up and usage, and safety checks.

b. General

(1) SMT must have completed Helicopter Rappel Training Ground School as required by OPNAVINST 3130.6 series.

(2) Prior to beginning flight training the SMT shall complete a local rappel ground-training syllabus and meet all requirements as indicated in applicable SAR related publications.

(3) All rappel-training evolutions shall be conducted with the use of the belay line for “Bagless” rappels or a HIRA qualified safety observer tending the free end of the rappel rope during a “Standard” rappel.

(4) Only HIRA qualified personnel shall act as a survivor for all training Short Haul evolutions.

(5) Rappel and Hoisting operations should not be conducted while any crewmember is using NVGs.

(6) Upon completion of this stage of training the SMT should be able to correctly perform all required equipment set-ups and safely rappel from the helicopter.

c. Prerequisite. The following flights of the HH-46D SMT syllabus shall be satisfactorily completed prior to commencing the HIRA Rappel training phase:

(1) Core Skill Introduction Training (6 flights, 9.0 hours).

(2) Core Skill Basic Training: Day SAR (10 flights, 15.5 hours).

d. Crew Requirements. HIRAI/HIRAUT.

e. Flight Training (4 flights, 6 hours)

RAP-400 1.5 C 1 ACFT

Goal. Introduce SAR rappelling operations.

Requirement

(1) Brief/Discuss

(a) Safety considerations.

(b) Crew coordination and communication during rappel operations to include standard ICS terminology and hand and arm signals.

(c) Equipment inventory, preflight inspection and set-up.

(2) Introduce/Demonstrate

(a) Rappel rope and belay line rigging and setups

(b) Conduct a minimum of 3 rappel descents, 2 standard rappels and 1 bagless rappel.

(c) Demonstrate the 3 “Lock-off” techniques.

Prerequisite. None.

Performance Standard. The SMTUI should properly setup the rappel and belay line and conduct safety checks.

Ordnance. None.

External Syllabus Support. None.

RAP-401 1.5 C 1 ACFT

Goal. Conduct SAR rappelling operations and introduce Short Haul Procedures.

Requirement

(1) Brief/Discuss

(a) Safety considerations.

(b) Crew coordination and communication during rappel operations to include standard ICS terminology and hand and arm signals.

(c) Equipment inventory, preflight inspection and set-up.

(d) Short Haul procedures and lock-off techniques.

(e) Hoisting Vest.

(2) Introduce/Demonstrate

(a) Rappel rope and belay line rigging and setups.

(b) Short Haul procedures and use of hoisting vest.

(c) Conduct a minimum of 3 rappel descents with 1 ending with a Short Haul of a survivor in the hoisting vest.

Prerequisite. RAP-400.

Performance Standard. The SMTUI should properly setup the rappel and belay line and conduct safety checks. The SMTUI should perform rappel and Short Haul operations.

Ordnance. None.

External Syllabus Support. None.

RAP-402 1.5 C,R 1 ACFT

Goal. Conduct SAR rappelling and Short Haul operations.

Requirement

(1) Brief/Discuss

(a) Safety considerations.

(b) Crew coordination and communication during rappel operations to include standard ICS terminology and hand and arm signals.

(c) Equipment inventory, preflight inspection and set-up.

(d) Short Haul procedures and lock-off techniques.

(e) Rappelling with equipment and Short Haul procedures with the rescue litter.

(2) Introduce/Demonstrate

(a) Rappel rope and belay line rigging and setups.

(b) Conduct a minimum of 3 rappel descents with equipment.

(c) Two descents should end with the Short Haul of a simulated survivor in the rescue litter.

Prerequisite. RAP-401.

Performance Standard. The SMTUI should properly setup the rappel and belay line and conduct safety checks. The SMTUI should perform rappel and Short Haul operations.

Ordnance. None.

External Syllabus Support. None.

RAP-403 1.5 C,R E 1 ACFT

Goal. HIRA Evaluation.

Requirement

(1) Brief/Discuss

(a) Safety considerations.

(b) Crew coordination and communication during rappel operations to include standard ICS terminology and hand and arm signals.

(c) Equipment inventory, preflight inspection and set-up.

(d) Short Haul procedures and lock-off techniques.

(2) Introduce/Demonstrate

(a) Rappel rope and belay line rigging and setups.

(b) Standard and bagless rappels with equipment.

(c) Conduct a minimum of 2 rappel descents, each ending with a Short Haul of a simulated survivor in the rescue litter.

Prerequisite. RAP-402.

Performance Standard. The SMTUI should properly setup the rappel and belay line and conduct safety checks. The SMTUI should perform rappel and Short Haul operations.

Ordnance. None.

External Syllabus Support. None.

2. Carrier Qualification

a. Purpose. Qualify during day and night/NVG shipboard landings.

b. General. Training includes FCLP NVG operations. Extended searches may require shipboard operations for refueling, casualty recovery, and/or remote site launches. The benefits of NVG operations cannot be over emphasized, and every effort should be made to ensure all crewmembers are SAR Night Systems Qualified (NSQ).

(1) Refer to appropriate NATOPS Manual for carrier operations.

(2) Minimum of 3 approaches for each FCLP flight.

c. Crew Requirements. SMTI/SMTUI.

d. Prerequisite. Completion of Core Skill Advanced training.

e. Flight Training (2 Flights, 3.0 Hours)

FCLP-410 1.5 C,R 1 ACFT

Goal. Day carrier pattern familiarization.

Requirement

(1) Brief/Discuss

(a) Day FCLP patterns, approaches, and landings.

(b) Emergency procedures peculiar to shipboard operations to include water landing and ditching.

(c) Discuss aircrew coordination, verbal/visual communications used during shipboard landings and LSE signals.

(d) Aircraft lighting.

(2) Introduce/Demonstrate. Conduct a minimum of 3 FCLPs.

Prerequisite. None.

Performance Standard. The SMTUI should be able to properly perform the duties of the left-side observer during FCLPs.

Ordnance. None

External Syllabus Support. None

FCLP-411 1.5 C,R 1 ACFT N(NS)

Goal. NVG carrier pattern familiarization.

Requirement

(1) Brief/Discuss

(a) Night FCLP patterns, approaches, and landings.

(b) Emergency procedures peculiar to shipboard operations to include water landing and ditching.

(c) Discuss aircrew coordination, verbal/visual communications used during shipboard landings and LSE signals.

(d) Aircraft lighting.

(2) Introduce/Demonstrate. Conduct a minimum of 3 FCLPs.

Prerequisite. NVG-303, FCLP-410.

Performance Standard. The SMTUI should be able to properly perform the duties of the left-side observer during FCLPs.

Ordnance. None.

External Syllabus Support. None.

450. SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS. Not applicable.

451. INSTRUCTOR UNDER TRAINING

1. Purpose. Standardize the procedures for qualifying syllabus instructors within individual units.

2. General

a. The SMT IUT must demonstrate proficiency instructing all evolutions in this stage. Upon completion of this stage the SMT IUT shall be designated a SAR Medical Technician Instructor (SMTI).

b. Crew Requirements. SMTI/SMTIUT.

c. Prerequisites. The following sections or flights of the HH-46D SMT syllabus shall be satisfactorily completed prior to commencing the Night SAR qualification training phase (34 Flights, 55.0 Hours):

(1) Core Skill Introduction Training (6 flights, 9.0 hours).

(2) Core Skill Basic Training: Day SAR (10 flights, 15.5 hours).

(3) Core Skill Advanced Training: NVG Operation (4 flights, 6.0 hours), and Night SAR (8 flights, 12.5 hours).

d. Flight Training (3 Flights, 4.5 Hours)

IUT-500 1.5 C 1 ACFT

Goal. Demonstrate instructional techniques during day FAM/CAL/INT sorties.

Requirement

(1) Brief/Discuss

(a) Instructional Techniques.

(b) Crew responsibilities during start-up, taxi, take-off, in-flight emergencies, and landings.

(c) Crew responsibilities and communications during SAR procedures.

(2) Introduce/Demonstrate. Thorough knowledge of all procedures related to FAM, CALs, and INT sorties.

Prerequisite. None.

Performance Standards. The SMT IUT should demonstrate instructional techniques in the performance of the responsibilities of the SMT.

Ordnance. None.

External Syllabus Support. None.

IUT-501 1.5 C 1 ACFT

Goal. Demonstrate instructional techniques during LAND SAREX.

Requirement

(1) Brief/Discuss

(a) Instructional Techniques.

(b) SMT responsibilities for planning Land SAREX.

(c) Evaluation guidelines and standards as identified by SOP.

(d) Crew responsibilities and communications during Land SAREX.

(2) Introduce/Demonstrate. Thorough knowledge of all procedures related to planning and evaluating a LAND SAREX.

Prerequisite. IUT-500.

Performance Standards. The SMT IUT should demonstrate instructional techniques in the performance of the responsibilities of the SMT.

Ordnance. None

External Syllabus Support. None

IUT-502 1.5 C,R 1 ACFT

Goal. Demonstrate instructional techniques during SAR operations.

Requirement

(1) Brief/Discuss

(a) Instructional techniques.

(b) SMT responsibilities while en route to training site.

(c) Crew responsibilities and communications during SAR procedures.

(2) Introduce/Demonstrate. Thorough knowledge of all procedures related to planning and assisting with overwater SAR exercises.

Prerequisite. IUT-501.

Performance Standards. The SMT IUT should demonstrate instructional techniques in the performance of the responsibilities of the SMT.

Ordnance. 1 MK-25, 1 MK-58.

External Syllabus Support. Secondary Rescue Vessel that is suitable for hoisting from (i.e. US Coast Guard or affiliate, US Military Vessels, Local Municipal Rescue/FD water rescue units, etc.).

IUT-503 3.0 C,R 1 ACFT

Goal. Plan and supervise a SMT NATOPS Evaluation.

Requirement

(1) Brief/Discuss

(a) Training site set-up and roles of simulated survivors to pertinent aircrew members.

(b) Special requests to simulate aircraft emergencies, failed gear, etc.

(c) Crew responsibilities and communications during SAR procedures.

(2) Introduce/Demonstrate. Thorough knowledge of all procedures related to planning and supervising an overwater SMT NATOPS evaluation.

Prerequisite. IUT-500, IUT-501, IUT-502.

Performance Standard. SMTIUT shall plan, coordinate, and conduct a SAREX unassisted.
Ordnance. 1 MK-25, 1 MK-58.

External Syllabus Support. Safety boat with safety swimmer that is suitable for hoisting from (i.e. US Coast Guard or affiliate,

US military vessels, local municipal rescue/FD water rescue units, etc.). Survivors as required.

Additional Comments. Completion of IUT-503 flight will satisfy the annual NATOPS evaluation requirement.

452. GRADUATE LEVEL COURSES. Not applicable.

453. SPECIAL TRAINING

1. Requirements, Qualification, and Designations

a. Purpose. To qualify the SMTUI for designation as a SMT/HIRA or to complete the annual NATOPS evaluation.

b. Prerequisite

(1) Completion of all required flights, as specified by the individual's training syllabus.

(2) Minimum of 50 flight hours for initial SMT.

c. Crew Requirements. SMTI/SMTUI.

d. Flight Training (3 Flight, 6.0 Hours)

RQD-600 1.5 C,R E 1 ACFT

Goal. NATOPS Evaluation.

Requirement. Perform a flight per the HH-46 NATOPS Flight Manual.

Prerequisite. None.

Performance Standards. The SMT should demonstrate competency in the performance of the responsibilities of a naval aircrewman.

Ordnance. None.

External Syllabus Support. None

RQD-602 3.0 C,R E 1 ACFT

Goal. SMT/HIRA qualification evaluation.

Requirement. A SMT/HIRA instructor will grade the SMTUI's performance per the NATOPS Flight Manual, OPNAVINST 3130.6 and applicable SAR and medical publications.

Prerequisite. None.

Performance Standards. The SMT should demonstrate competency in the performance of the responsibilities of a SMT/HIRA.

Ordnance. 1 MK-25, 1 MK-58.

External Syllabus Support. Secondary Rescue Vessel that is suitable for hoisting from (i.e. US Coast Guard or affiliate, US

Military Vessels, Local Municipal Rescue/FD water rescue units, etc.).

RQD-640 1.5 C,R E 1 ACFT

Goal. CRM evaluation.

Requirement. A CRM facilitator/instructor will grade the SMTUI's performance per the NATOPS Flight Manual, OPNAVINST 3710.7, and OPNAVINST 1542.7.

Prerequisite This flight may be flown in conjunction with the annual NATOPS Evaluation.

Performance Standards The SMT should demonstrate competency in the performance of the responsibilities of a Naval Aircrewman and apply all the principles of CRM.

Ordnance. None.

External Syllabus Support. None.

460. EXPENDABLE ORDNANCE REQUIREMENTS

ORDNANCE	100 SERIES	200 SERIES	300 SERIES	400 SERIES	REFRESHER	IUT	ANNUAL*
Mk-25 Flares		5	2			1	
Mk-58 Flares		7	2			1	

* Annual Ordnance requirements maintain an aircrew member at 85% MRP per T&R Program Manual.

AIRCRAFT: HH-46 (SAR) NEC: 8401 CREW POSITION: SAR MEDICAL TECHNICIAN

STAGE	FLIGHT TRAINING	REFLY CODE	HRS	INTERVAL	MRP	R	E	REMARKS
CORE SKILL INTRODUCTION TRAINING								
FAM	108	*	1.5		1.5			1 ACFT
EP	l09	*	1.5		2.0	X		1 ACFT
CAL	120	*	1.5		1.5			1 ACFT
INT	130	*	1.5		1.5			1 ACFT
	131	*	1.5		1.5	X		1 ACFT
FF	140	*	1.5		2.0	X		1 ACFT
					Tot 10			
CORE SKILL BASIC TRAINING								
SAR	200	365	1.5		1.5			1 ACFT
	201	365	1.5		1.5	X		1 ACFT
	202	180	1.5		1.5			1 ACFT
	203	180	1.5		1.5	X		1 ACFT
	204	365	1.5		1.5	X		1 ACFT
	205	180	2.0		1.5	X		1 ACFT
	206	180	1.5		1.5	X		1 ACFT
	207	180	1.5		1.5	X		1 ACFT
	208	180	1.5		1.5	X		1 ACFT
	209	180	1.5		1.5	X		1 ACFT
					Tot 15			
CORE SKILL ADVANCED TRAINING								
NVG	300	180	1.5		1.5	X		1 ACFT N NS
	301	180	1.5		1.5			1 ACFT N NS
	302	180	1.5		1.5	X		1 ACFT N NS
	303	180	1.5		1.5			1 ACFT N NS
NSAR	321	180	1.5		1.5			1 ACFT N(NS)
	322	180	1.5		1.5	X		1 ACFT N(NS)
	323	180	2.0		1.5			1 ACFT N(NS)
	324	180	1.5		1.5			1 ACFT N(NS)
	325	180	1.5		2.0	X		1 ACFT N(NS)
	326	180	1.5		2.0	X		1 ACFT N(NS)
	327	180	1.5		2.0	X		1 ACFT N(NS)
	328	365	2.0		2.0	X		1 ACFT N(NS)
					Tot 20			
CORE PLUS TRAINING								
RAP	400	365	1.5		1.0			1 ACFT
	401	365	1.5		1.0			1 ACFT
	402	365	1.5		1.0	X		1 ACFT
	403	365	1.5		1.0	X	X	1 ACFT
FCLP	410	365	1.5		.5	X		1 ACFT
	411	365	1.5		.5	X		1 ACFT N(NS)
					Tot 5.0			
INSTRUCTOR UNDER TRAINING FLIGHT PERFORMANCE REQUIREMENTS								
IUT	500	*	1.5				X	1 ACFT
	501	*	1.5				X	1 ACFT
	502	*	1.5			X	X	1 ACFT
	503	*	1.5			X	X	1 ACFT
SPECIAL FLIGHT PERFORMANCE REQUIREMENTS								
RQD	600	365	1.5			X	X	1 ACFT (N)
	602	365	3.0			X	X	1 ACFT (N)
	640	365	1.5			X	X	1 ACFT (N)

Figure 4-1.--NEC 8401 Refly Interval, Mission Readiness Percentage.

NEC 8401 FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHT UPDATED
SAR	200	
	201	200
	202	
	203	202
	204	203,202
	205	203,202
	206	
	207	206
	208	207,206
	209	206
NVG	300	
	301	300
	302	301,300
	303	302,301,300
NSAR	321	202
	322	321,203,202
	323	322,321,205,203,202
	324	206
	325	324,206
	326	325,324,206
	327	324,209,206
	328	
RAP	400	
	401	400
	402	401,400
	403	402,401,400
FCLP	410	
	411	410
IUT	500	202
	501	205,203,202
	502	208,207,206
RQD	600	
	602	
	640	

Figure 4-2.--NEC 8401 Flight Update Chaining.

SYLLABUS EVENT CONVERSION MATRIX

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	100 LEVEL		
FAM	100	FAM	108
	101	EP	109
INT	120	INT	130
	121		131
NFAM	130		

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	200 LEVEL		
CAL	200	CAL	120
	201		
EXT	220	FF	140

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	300 LEVEL		
SAR	300	SAR	200
	303		206
	304		203
	305		208
	306	RAP	402
	307	SAR	209
	308		205
	320	NSAR	323
	323		
	326		326
	328		328
			321
			322
			326
			327
NVG	330	NVG	300

Figure 4-3.--NEC 8401 Syllabus Conversion Matrix.

SYLLABUS EVENT CONVERSION MATRIX

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	400 LEVEL		
NVG	400	NVG	301
	401		302
			303
		FCLP	410
FCLP	422		411
CQ	425		

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	500 LEVEL		
		IUT	500
			501
			502
			503

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
	600 LEVEL		
RQD	601	RQD	600
			602
		CRM	640

Figure 4-3.--NEC 8401 Syllabus Conversion Matrix, Continued.